

10/8/24, 993

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NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	May 12	EXTEND option available in structure searching
NEWS	4	May 12	Polymer links for the POLYLINK command completed in REGISTRY
NEWS	5	May 27	New UPM (Update Code Maximum) field for more efficient patent SDIs in Caplus
NEWS	6	May 27	Caplus super roles and document types searchable in REGISTRY
NEWS	7	Jun 28	Additional enzyme-catalyzed reactions added to CASREACT
NEWS	8	Jun 28	ANTE, AQUALINE, BIOENG, CIVILENG, ENVIROENG, MECHENG, and WATER from CSA now available on STN(R)
NEWS	9	Jul 12	BEILSTEIN enhanced with new display and select options, resulting in a closer connection to BABS
NEWS	10	Jul 30	BEILSTEIN on STN workshop to be held August 24 in conjunction with the 228th ACS National Meeting
NEWS	11	AUG 02	IFIPAT/IFIUDB/IFICDB reloaded with new search and display fields
NEWS	12	AUG 02	Caplus and CA patent records enhanced with European and Japan Patent Office Classifications
NEWS	13	AUG 02	STN User Update to be held August 22 in conjunction with the 228th ACS National Meeting
NEWS	14	AUG 02	The Analysis Edition of STN Express with Discover! (Version 7.01 for Windows) now available
NEWS	15	AUG 04	Pricing for the Save Answers for SciFinder Wizard within STN Express with Discover! will change September 1, 2004
NEWS EXPRESS		JULY 30	CURRENT WINDOWS VERSION IS V7.01, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 11 AUGUST 2004
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 17:32:43 ON 22 AUG 2004

=> fil reg  
COST IN U.S. DOLLARS

FULL ESTIMATED COST

SINCE FILE	TOTAL
ENTRY	SESSION
0.21	0.21

FILE 'REGISTRY' ENTERED AT 17:33:06 ON 22 AUG 2004  
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STRUCTURE FILE UPDATES: 21 AUG 2004 HIGHEST RN 729615-76-3  
DICTIONARY FILE UPDATES: 21 AUG 2004 HIGHEST RN 729615-76-3

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> s hydrogen/cn  
L1 1 HYDROGEN/CN

=> d l1

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 1333-74-0 REGISTRY  
 CN **Hydrogen (8CI, 9CI)** (CA INDEX NAME)  
 OTHER NAMES:  
 CN Dihydrogen  
 CN Hydrogen (H2)  
 CN Hydrogen molecule  
 CN Mol. hydrogen  
 CN Molecular hydrogen  
 CN Orthohydrogen  
 CN Parahydrogen  
 CN Protium  
 MF H2  
 CI COM  
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,  
 CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNS, CEN, CHEMCATS,  
 CHEMINFORMIX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM\*,  
 DIOGENES, DIPPE\*, DRUG, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPAT,  
 ENCOMPAT2, HSDB\*, IFICDB, IFIPAT, IFIUDS, IMSCOSEARCH, IPA, MEDLINE,  
 MRCK\*, MSDS-OHS, NIOSHTIC, POLCOM\*, PIRA, PROCT, RTECS\*, SPECINFO,  
 TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)  
 DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;  
 Preprint; Report  
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);  
 CMBI (Combinatorial study); FORM (Formation, nonpreparative); MSC  
 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);  
 PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No  
 role in record)  
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical  
 study); BIOL (Biological study); MSC (Miscellaneous); OCCU  
 (Occurrence);  
 PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or  
 reagent); USES (Uses)  
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological  
 study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);  
 MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC  
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);  
 NORL (No role in record)  
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical  
 study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC  
 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);  
 PRP (Properties); RACT (Reactant or reagent); USES (Uses)  
  
 H-H  
  
 288499 REFERENCES IN FILE CA (1907 TO DATE)  
 3238 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 288698 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

```
=> s ammonia
L2      5578 AMMONIA

=> s ammonia/cn
L3      1 AMMONIA/CN

=> d 13
```



L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN  
 RM 7664-41-7 REGISTRY  
 CN Ammonia (8CI, 9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN 21: PN: US20040009933 PAGE: 16 claimed sequence  
 CN Ammonia gas  
 CN Ammonia-14N  
 CN Nitro-S11  
 CN R 717  
 CN Refrigerent R717  
 CN Spirit of Hartshorn  
 FS 3D CONCORD  
 DR 8007-57-6, 208990-07-2, 214478-05-4, 558443-52-0  
 MF H3 N  
 CI COM  
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, ACQUIRE, BIOBUSINESS, BIOSIS,  
 BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,  
 CHEMCATS, CHEMINFORMAX, CHEMLIST, CHEMSAFE, CTM, CSICHEM, CSNB, DDFU,  
 DETHERM\*, DIOGENES, DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2,  
 ENCOMPAT, ENCOMPAT2, GELIN\*, HSDB\*, IFICDB, IFIPAT, IFIUD, IPA,  
 MEDLINE, MRCK\*, MSDS-OHS, NIOSHTIC, PDLCOM\*, PTRA, PROMT, RTECS\*,  
 SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)  
 DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent;  
 Preprint; Report  
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study);  
 FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU  
 (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties);  
 RACT  
 (Reactant or reagent); USES (Uses); NORL (No role in record)  
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical  
 study); BIOL (Biological study); CMBI (Combinatorial study); FORM  
 (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence);  
 PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or  
 reagent); USES (Uses)  
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological  
 study); CMBI (Combinatorial study); FORM (Formation, nonpreparative);  
 MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC  
 (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses);  
 NORL (No role in record)  
 RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical  
 study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC  
 (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process);  
 PRP (Properties); RACT (Reactant or reagent); USES (Uses)  
 NH3  
 130991 REFERENCES IN FILE CA (1907 TO DATE)  
 1711 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 131072 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> fil caplus		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	17.67	17.88

FILE 'CAPLUS' ENTERED AT 17:34:15 ON 22 AUG 2004  
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FILE COVERS 1907 - 22 Aug 2004 VOL 141 ISS 9  
 FILE LAST UPDATED: 20 Aug 2004 (20040820/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s pd or palladium
    170312 PD
    2008 PDS
    171968 PD
        (PD OR PDS)
    141996 PALLADIUM
    35 PALLADIUMS
    141999 PALLADIUM
        (PALLADIUM OR PALLADIUMS)
L4    223685 PD OR PALLADIUM
```

```
=> s Ni or nickel
    572330 NI
    3623 NIS
    574498 NI
        (NI OR NIS)
    556503 NICKEL
    189 NICKELS
    556530 NICKEL
        (NICKEL OR NICKELS)
L5    773496 NI OR NICKEL
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=> s catalyst
    663997 CATALYST
    668567 CATALYSTS
L6    851071 CATALYST
        (CATALYST OR CATALYSTS)
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```
=> s l4 and l5 and l6
L7    12622 L4 AND L5 AND L6
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=> s zn or zinc
    442111 ZN
    25478 ZNS
    461571 ZN
        (ZN OR ZNS)
    529171 ZINC
        94 ZINCS
    529190 ZINC
        (ZINC OR ZINCS)
L8      710036 ZN OR ZINC

=> s Cd or cadmium
    238819 CD
    27606 CDS
    259944 CD
        (CD OR CDS)
    216315 CADMIUM
        24 CADMIUMS
    216318 CADMIUM
        (CADMIUM OR CADMIUMS)
L9      351819 CD OR CADMIUM

=> s Cu or copper
    761740 CU
    4652 CUS
    763727 CU
        (CU OR CUS)
    814233 COPPER
        415 COPPERS
    814296 COPPER
        (COPPER OR COPPERS)
L10     1088140 CU OR COPPER

=> s Ag or silver
    293034 AG
    4318 AGS
    296028 AG
        (AG OR AGS)
    284249 SILVER
        119 SILVERS
    284297 SILVER
        (SILVER OR SILVERS)
L11     411318 AG OR SILVER

=> s l7 and l8
L12     2003 L7 AND L8

=> s l7 and l9
L13     570 L7 AND L9

=> s l7 and l10
L14     4232 L7 AND L10

=> s l7 and l11
L15     2199 L7 AND L11

=> s 7664-41-7/rn
    131293 7664-41-7
    1711 7664-41-7D

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L16      129743 7664-41-7/RN
          (7664-41-7 (NOTL) 7664-41-7D )

=> s 1333-74-0/rn
      288989 1333-74-0
      3239 1333-74-0D
L17      286018 1333-74-0/RN
          (1333-74-0 (NOTL) 1333-74-0D )

=> s l16 and l17
L18      9006 L16 AND L17

=> s l18 and l12
L19      28 L18 AND L12

=> s l18 and l13
L20      5 L18 AND L13

=> s l18 and l14
L21      55 L18 AND L14

=> s l18 and l15
L22      25 L18 AND L15

=> s l19 or l20 or l21 or l22
L23      68 L19 OR L20 OR L21 OR L22

=> d l23 1-68 abs ibib

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L23 ANSWER 1 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Metal oxides having a perovskite or perovskite-like crystal structure are prepared by a process comprising subjecting a mixture of starting powders to a high energy milling sufficient to induce chemical reaction of the components and thereby directly mechanosynthesize said metal oxide in the form of a perovskite or a perovskite-like material having a nanocryst. structure as determined by x-ray diffractometry. The process according to the present invention is simple, efficient, not expensive and does not require any heating step for producing a perovskite that may easily show a high sp. surface area. Another advantage is that the perovskite obtained according to the present invention also has a high d. of lattice defects thereby showing a higher catalytic activity, a characteristic which is highly desirable in their eventual application as catalysts and electronic conductors.

ACCESSION NUMBER: 2004:618689 CAPLUS  
 DOCUMENT NUMBER: 141:142713  
 TITLE: Process for synthesizing metal oxides and metal oxides  
 INVENTOR(S): having a perovskite or perovskite-like crystal structure  
 PATENT ASSIGNEE(S): Kallaguine, Serge; Van Neste, Andre  
 SOURCE: Universite Laval, Can.  
 U.S. 16 pp., Cont.-in-part of U.S. Ser. No. 116,732.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6770256	B1	20040803	US 2001-743985	20010409
US 6017504	A	20000125	US 1998-116732	19980716
WO 2000003947	A1	20000127	WO 1999-CA638	19990715

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GW, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1998-116732 A2 19980716  
 WO 1999-CA638 W 19990715

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 3 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The invention is related to a process for synthesizing amines and polyamines, in particular isophorone diamine (IPDA), by hydrogenation of substrates or intermediates containing a nitrile and an imine group in the presence of a catalyst based on a Group VIII metal, water and ammonia in a condensed phase, and advantageously liquid phase. The process eliminates side reactions such as transimination and reduction of the ketone to the alc. Dry Raney type Co catalyst was added to vials containing stock solns. of isophorone nitrile dissolved in methanol, H2O, water and an internal standard, and the reactor was pressurized with 35 bar H2 for 6 h to give IPDA in 55% yield and cis/trans ratio = 13.7. Similarly, addition of acetylacetonates of Hf, Cr, and Ir through liquid phase on the catalyst with low Ni content provided a decrease in the cis/trans ratio to about 3.3.

ACCESSION NUMBER: 2004:589534 CAPLUS  
 DOCUMENT NUMBER: 141:140103  
 TITLE: Process for synthesizing amines, in particular isophorone diamines, by hydrogenation of substrates and intermediates containing both a nitrile and an imine group in the presence of Raney type catalyst, especially Co-based, water and ammonia  
 INVENTOR(S): Marion, Philippe; Lowe, David Michael; Volpe, Anthony F., Jr.; Weskamp, Thomas  
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.  
 SOURCE: PCT Int. Appl., 31 pp.  
 CODEN: PIKXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004060866	A2	20040722	WO 2003-US41441	20031231

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-437155P P 20021231

L23 ANSWER 2 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB This invention describes a method for producing nano-C materials, having a step wherein a starting material comprising one or more kinds of compds. selected from the group consisting saturated hydrocarbons, unsatd. hydrocarbons, saturated cyclic hydrocarbons, and alcs. whose atomic ratio of the component C to the component oxygen is >2.0 and a catalyst are together treated at a temperature in a range of from 100 to 800° while being compressed at a pressure in a range of from 0.2 to 60 MPa, where said starting material is converted into a supercrit. fluid or a subcrit. fluid while said supercrit. fluid or said subcrit. fluid being contacted with said catalyst, or a step wherein said starting material, said catalyst and a supplementary material capable of functioning as a reaction promotion medium are together treated at a temperature in a range of from 100 to 800° while being compressed at a pressure in a range of from 0.2 to 60 MPa, where at least said supplementary material is converted into a supercrit. fluid or a subcrit. fluid and said starting material is contacted with said supercrit. fluid or said subcrit. fluid formed from said supplementary material while being contacted with said catalyst.

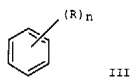
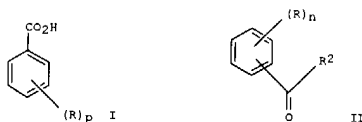
ACCESSION NUMBER: 2004:608981 CAPLUS  
 DOCUMENT NUMBER: 141:146246  
 TITLE: Method for producing nano-carbon materials  
 INVENTOR(S): Kawakami, Soichiro; Inoue, Katsuhiko; Sano, Hitomi; Suzuki, Nobuyuki  
 PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan  
 SOURCE: Eur. Pat. Appl., 43 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1440932	A2	20040728	EP 2004-1456	20040123

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, IT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

PRIORITY APPLN. INFO.: JP 2003-14212 A 20030123

L23 ANSWER 4 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



AB The invention is related to a process for synthesizing amines and polyamines, in particular isophorone diamine (IPDA), by hydrogenation of substrates or intermediates containing a nitrile and an imine group in a condensed phase, and advantageously liquid phase in the presence of Raney type Co catalyst doped with at least 2 potentiator elements selected from Ni, Cr, Rh, Ir, Zr etc., wit at least one of them being Ni or Cr. The process eliminates side reactions such as transimination and reduction of the ketone to the alc. and allows one-step hydrogenation of an imine nitrile compound. Dry Raney type Co catalyst was added to vials containing stock solns. of isophorone nitrile dissolved in methanol, H2O, water and an internal standard, and the reactor was pressurized with 35 bar H2 for 6 h to give IPDA in 85% yield and cis/trans ratio = 3.5. Similarly, addition of acetylacetonates of Hf, Cr, and Ir through liquid phase on the catalyst with low Ni content provided a decrease in the cis/trans ratio to about 3.3 and an increase in the IPDA yield. Ni was a bad potentiator, while Pt group metals were good potentiators when introduced through liquid phase on Raney type Co catalyst already doped with Ni and Cr.

ACCESSION NUMBER: 2004:589515 CAPLUS  
 DOCUMENT NUMBER: 141:140102  
 TITLE: Process for synthesizing amines, in particular isophorone diamines, by hydrogenation of substrates and intermediates containing both a nitrile and an imine group in a condensed phase in the presence of Raney type catalyst doped with potentiator elements, in particular Nickel and Chromium  
 INVENTOR(S): Marion, Philippe; Lowe, David Michael; Volpe, Anthony F., Jr.; Weskamp, Thomas  
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.

L23 ANSWER 4 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
SOURCE: PCT Int. Appl., 30 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004060833	A2	20040722	WO 2003-US41536	20031231
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2002-437156P P 20021231

L23 ANSWER 5 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Hydrogen permeable membranes are described for separation of hydrogen from hydrogen-containing gases. The membranes are multilayer having a central hydrogen permeable layer with 21 catalyst layers, barrier layers, and/or protective layers. Membrane reactors are provided with the hydrogen-permeable membranes for hydrogen separation from gases, especially synthesis gas, using the membranes and reactors, combined with addnl. reactor systems for direct use of the separated hydrogen.  
ACCESSION NUMBER: 2004:550387 CAPLUS  
DOCUMENT NUMBER: 141:108330  
TITLE: Dense, layered membranes for hydrogen separation  
INVENTOR(S): Roark, Shane E.; MacKay, Richard; Mundschauf, Michael V.  
PATENT ASSIGNEE(S): USA  
SOURCE: U.S. Pat. Appl. Publ., 41 pp., Cont.-in-part of U.S. Pat. Appl. 2003 183,080.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004129135	A1	20040708	US 2003-717218	20031119
US 2003183080	A1	20031002	US 2003-382354	20030305
PRIORITY APPLN. INFO.:			US 2002-362167P	P 20020305
			US 2003-382354	A2 20030305
			US 2003-502158P	P 20030910

L23 ANSWER 6 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Secondary amines (e.g., bis[3-(dimethylamino)propyl]amine) are prepared by the condensation of primary amines (e.g., 3-[(dimethylamino)propyl]amine) in the presence of hydrogen over a catalyst comprising a Group VIII metal (e.g., Ni, Cu, and Co) and/or a Group IB metal on a zirconia support.  
ACCESSION NUMBER: 2004:510184 CAPLUS  
DOCUMENT NUMBER: 141:56074  
TITLE: Condensation process and catalyst system for the preparation of a symmetrical secondary amines from primary amines  
INVENTOR(S): Gerlach, Till; Funke, Frank; Benisch, Christoph; Melder, Johann-Peter  
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany  
SOURCE: Eur. Pat. Appl., 19 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1431273	A1	20040623	EP 2003-27758	20031203
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, TE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10261195	A1	20040701	DE 2002-10261195	20021220
PRIORITY APPLN. INFO.:			DE 2002-10261195	A 20021220

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L23 ANSWER 7 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Amines (e.g., polyisobutylene amine) are prepared by the catalytic reductive amination of an alc., aldehyde, or ketone, (e.g., the aldehyde hydroformylation products of polyisobutylene) with hydrogen, and either a primary or secondary amine, or ammonia in the presence of a Group VIII (e.g., Co, Cu, and Ni) or IB metal on zirconia.  
ACCESSION NUMBER: 2004:510183 CAPLUS  
DOCUMENT NUMBER: 141:54832  
TITLE: Process for the catalyzed hydrogenation of an aliphatic unsaturated group into a saturated organic compound  
INVENTOR(S): Gerlach, Till; Funke, Frank; Melder, Johann-Peter  
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany  
SOURCE: Eur. Pat. Appl., 15 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1431272	A1	20040623	EP 2003-26512	20031118
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, TE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10261194	A1	20040701	DE 2002-10261194	20021220
US 2004122265	A1	20040624	US 2003-731167	20031210
JP 2004203876	A2	20040722	JP 2003-421213	20031218
PRIORITY APPLN. INFO.:			DE 2002-10261194	A 20021220

L23 ANSWER 8 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Amines (e.g., polyisobutylene amine) are prepared by the catalytic reductive amination of an alc., aldehyde, or ketone, (e.g., the aldehyde hydroformylation products of polyisobutylene) with hydrogen, and either a primary or secondary amine, or ammonia in the presence of a Group VIII (e.g., Co, Cu, and Ni) or 18 metal on zirconia.

ACCESSION NUMBER: 2004:510182 CAPLUS  
 DOCUMENT NUMBER: 141:54831  
 TITLE: Catalytic reductive amination process for the preparation of an amine  
 INVENTOR(S): Gerlach, Till; Funke, Frank; Melder, Johann-Peter  
 PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany  
 SOURCE: Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1431271	A1	20040623	EP 2003-26511	20031118
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10261193	A1	20040701	DE 2002-10261193	20021220
US 2004122259	A1	20040624	US 2003-731158	20031210
JP 2004203875	A2	20040722	JP 2003-421212	20031218
PRIORITY APPLN. INFO.:			DE 2002-10261193	A 20021220

REFERENCE COUNT: 4  
 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 9 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The present invention relates to an effluent abatement/energy generation system, as well as a method, for abating a process effluent gas stream that contains one or more target compds. such as hydrogen gas, ammonia gas, isopropanol, and other volatile organic compds. such as organic solvents, that are readily oxidizable, and for concurrently generating energy using such process effluent gas stream. Such effluent abatement/energy generation system comprises a purification unit for removing components other than such target compds. from the process effluent gas stream, and an energy generation unit for generating thermal and/or elec. energy.

ACCESSION NUMBER: 2004:490090 CAPLUS  
 DOCUMENT NUMBER: 141:27592  
 TITLE: Integrated system and process for effluent abatement and energy generation  
 INVENTOR(S): Olander, W. Karl  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 9 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

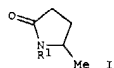
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004112056	A1	20040617	US 2002-316577	20021211
PRIORITY APPLN. INFO.:			US 2002-316577	20021211

L23 ANSWER 10 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The catalytic decomposition of ammonia has recently been proposed as a possible source of hydrogen for fuel cells. However, the ruthenium catalyst is costly. Although there exist several correlations for catalytic activity that suggest potentially useful alternatives, the particular candidates differ. The present work seeks to determine exptl. which, if any, of these correlations correctly predicts suitable substitutes. The expts. examine 13 different metallic catalysts from numerous places within the Periodic Table, and show that the activity varies in the order Ru>Ni>Rh>Co>Ir>Fe>Pt>Cr>Pd>Cu>Mn>Tl>Te, Se, Pb. The results suggest that nitrogen desorption limits the rate on Fe, Co, and Ni, whereas N-H bond scission limits the rate on other metals such as Rh, Ir, Pd, Pt, and Cu. Conventional single-parameter correlations of activity generally fail to predict the results because the rate-determining step changes across the data set.

ACCESSION NUMBER: 2004:455735 CAPLUS  
 DOCUMENT NUMBER: 141:60439  
 TITLE: A Priori Catalytic Activity Correlations: The Difficult Case of Hydrogen Production from Ammonia  
 AUTHOR(S): Ganley, J. C.; Thomas, F. S.; Seebauer, E. G.; Masel, R. I.  
 CORPORATE SOURCE: Department of Chemical and Biomolecular Engineering, 213 Roger Adams Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL, 61801-3792, USA  
 SOURCE: Catalysis Letters (2004), 96(3-4), 117-122  
 CODEN: CALBER; ISSN: 1011-372X  
 PUBLISHER: Kluwer Academic/Plenum Publishers  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 32  
 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 11 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A substitute for zeolites: The nanoporous nickel phosphate VSB-1 exhibits zeolitic properties and very weak acidity and basicity. When VSB-1 is modified by metal-ion exchange or through metal incorporation into the framework, it offers promising catalytic properties, such as shape selectivity, and activity in both redox catalysis and photocatalysis.

ACCESSION NUMBER: 2004:453932 CAPLUS  
 DOCUMENT NUMBER: 140:412882  
 TITLE: Nanoporous metal-containing nickel phosphates: A class of shape-selective catalyst  
 AUTHOR(S): Chang, Jong-San; Hwang, Jin-Soo; Chung, Sung Hwa; Park, Sang-Eon; Ferey, Gerard; Cheetham, Anthony K.  
 CORPORATE SOURCE: Catalysis Center for Molecular Engineering, Korea Research Institute of Chemical Technology, Yuseong, Taejeon, 305-600, S. Korea  
 SOURCE: Angewandte Chemie, International Edition (2004), 43(21), 2819-2822  
 CODEN: ACHIEF5; ISSN: 1433-7851  
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English



AB Title compds. (I; R1 = C6-30 aryl, partially or completely reduced derivative thereof) were prepared by reaction of MeCOCH2CH2CO2H with RNH2 (R = C6-30 aryl) in the presence of H2 and an optionally supported catalyst and an optional solvent. Thus, reaction of levulinic acid and PhNH2 in dioxane at 6.90 MPa H2 at 150° over Pd/C in a sealed vessel for 6 h gave 44.7% 5-methyl-N-cyclohexyl-2-pyrrolidinone and 10% 5-methyl-N-phenyl-2-pyrrolidinone.

ACCESSION NUMBER: 2004:442651 CAPLUS  
DOCUMENT NUMBER: 141:7018  
TITLE: Preparation of 5-methyl-N-aryl-2-pyrrolidones and 5-methyl-N-cycloalkyl-2-pyrrolidones by reductive amination of levulinic acid with arylamines

INVENTOR(S): Manzer, Leo Ernest  
PATENT ASSIGNEE(S): E. I. Du Pont de Nemours and Company, USA  
SOURCE: U.S., 11 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6743819	B1	20040601	US 2003-396212	20030324
PRIORITY APPLN. INFO.:			US 2003-396212	20030324

OTHER SOURCE(S): CASREACT 141:7018; MARPAT 141:7018  
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L23 ANSWER 13 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB A number of elementary reactions at metal surfaces show a linear Bronsted-Evans-Polanyi relation between the activation energy and the reaction energy, and reactions belonging to the same class even follow the same relation. We investigate the implications of this finding on the kinetics of surface-catalyzed chemical processes. We focus in particular on the variation in the activity from one metal to the next. By analyzing a number of simple microkinetic models we show that the reaction rate under given reaction conditions shows a maximum as a function of the dissociative adsorption energy of the key reactant, and that for most conditions this maximum is in the same range of reaction energies. We also provide a database of chemisorption energies calculated using d.-functional theory for a number of simple gas mols. on 13 different transition metals. An important part of the anal. consists of developing a general framework for analyzing the maximum rate. We use these concepts to rationalize trends in the catalytic activity of a number of metals for the methanation process.

ACCESSION NUMBER: 2004:343072 CAPLUS  
DOCUMENT NUMBER: 140:363714  
TITLE: The Bronsted-Evans-Polanyi relation and the volcano curve in heterogeneous catalysis

AUTHOR(S): Bligaard, T.; Norskov, J. K.; Dahl, S.; Matthiesen, J.; Christensen, C. H.; Sehested, J.  
CORPORATE SOURCE: Department of Physics, Center for Atomic-Scale Materials Physics, Technical University of Denmark, Lyngby, DK-2800, Den.  
SOURCE: Journal of Catalysis (2004), 224(1), 206-217  
CODEN: JCTLA5; ISSN: 0021-9517  
PUBLISHER: Elsevier Science  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L23 ANSWER 14 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB Novel stable metallic mesoporous transition metal oxide-based mol. sieves are described that are characterized by: (1) ≥50 mol% of a transition metal oxide selected from TiO2, ZrO2, Nb2O5, Hf2O5, and Ta2O5, and (2) at least one other transition metal or lanthanide metal deposited in the pores of the mesoporous transition metal oxide. In addition to a transition metal oxide or a lanthanum metal oxide, component (1) can include an alkali metal oxide, an alkaline earth metal oxide, or a main group element oxide (Groups IIIA to VIIA). The inorg. oxide is selected from oxides of Y, V, Ti, Os, Rh, Pt, Pd, Au, Fe, Ru, Re, Cu, Co, Ti, Ni, Cr, Mo, Mn, or W; in addition, metal salts such as KCl or NaCl may also be present. The mol. sieves, which have a pore size of 10-500 Å, with a BET surface area of 50-1200 m2/g, have application as a solid electrolyte, a hydrogen storage medium, as petroleum refining catalysts, and as catalysts for room temperature activation of dinitrogen to produce ammonia as room temperature

ACCESSION NUMBER: 2004:331750 CAPLUS  
DOCUMENT NUMBER: 140:323606  
TITLE: Metallic mesoporous transition metal oxide molecular sieves as solid electrolyte, petroleum refining catalysts, and ammonia synthesis catalysts

INVENTOR(S): Antonelli, David M.  
PATENT ASSIGNEE(S): Can.  
SOURCE: U.S. Pat. Appl. Publ., 31 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004077493	A1	20040422	US 2002-302987	20021125
PRIORITY APPLN. INFO.:			CA 2002-2404830	A 20021017

L23 ANSWER 15 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB The invention concerns procedures for the production of 3-aminomethyl-3,5,5-trimethylcyclohexylamine (i.e., isophorone diamine, IPDA) with a high cis-trans isomer ratio. IPDA with a cis-trans isomere ratio within the range of 63/37-66/34, resp., can be produced by conversion of IPDA with any cis-trans isomer ratio by contact with H2 and NH3 in the presence of a hydrogenation catalyst. Process flow diagrams are presented.

ACCESSION NUMBER: 2004:138710 CAPLUS  
DOCUMENT NUMBER: 140:199890  
TITLE: Hydrogenation and distillation process for the production of isophorone diamine (IPDA, 3-aminomethyl-3,5,5-trimethylcyclohexylamine) with a high cis-trans isomer ratio

PATENT ASSIGNEE(S): BASF AG, Germany  
SOURCE: Ger. Offen., 14 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10236675	A1	20040219	DE 2002-10236675	20020809
WO 2004020386	A1	20040311	WO 2003-EP8722	20030806

W: AE, AG, AI, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

DE 2002-10236675	A	20020809
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L23 ANSWER 16 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Energy is generated by reacting urea with water to form ammonia and oxidizing the ammonia to form water and nitrogen. The reaction of urea with water is carried out at 140-240° and 30-50 atm, optionally in the presence of a catalyst, especially oxides of Fe, Ni, V, and Zn, or the enzyme urease. A combustible fuel, preferably ammonia or hydrogen, and/or a combustion enhancer can be added to the reaction mixture. The formed ammonia is combusted in an engine. The formation of nitrogen oxides during the combustion step can be reduced by addition of urea as a reducing agent. The ammonia can be contacted with

a catalyst consisting of iron (II) oxide or iron (III) oxide promoting the formation of hydrogen which is subsequently combusted in the presence of a Pt-containing catalyst. Urea and water can be reacted in the absence of an oxidizing agent and in the presence of a catalyst to form hydrogen. The catalyst contains Pt, Pd, Ni, Co, Fe, Cu, Zn, Ti, V, Mo, Rh, Ru, Zr, W, Re, Ag, or Au. Fuel cells are used to generate electricity from hydrogen, ammonia, or directly from urea. The method and apparatus are used to generate energy for use in stationary and mobile applications.

ACCESSION NUMBER: 2003:930715 CAPLUS  
 DOCUMENT NUMBER: 139:367495  
 TITLE: Fuel cell for generating electricity using urea and water  
 INVENTOR(S): Amendola, Steven C.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 20 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003219371	A1	20031127	US 2003-408731	20030407
PRIORITY APPLN. INFO.:			US 2002-372530P	P 20020415

L23 ANSWER 18 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A system and method is described having a single reaction vessel using superheated steam optionally augmented by oxygen for reducing nitrates present in a wide variety of organic compds. in waste products, compds. and wastewaters. More specifically, the invention relates to a single step process utilizing a fluidized bed reactor to remove nitrates from explosive, hazardous and/or radioactive materials. The method comprises: providing a waste feed containing nitrates; providing a first reaction vessel having at least one zone that is in fluid communication with a second reaction vessel having at least one zone; heating the reaction vessel to an operating temperature; and introducing steam, at least one additive, at least one co-reactant, and waste material into the reaction vessel wherein the steam is injected at a velocity that agitates the waste material and elutriates fine solids from the reaction vessel; operating at least one zone of the first reaction vessel and the second reaction vessel under strongly reducing conditions so that substantially all of the nitrates in the waste material are reduced at the operating temperature, thereby eliminating substantially all the nitrates present in the waste material and leaving an inorg. residue of decreased concentration in nitrates and a gaseous effluent of decreased concentration in nitrates. Reducing additives are metered into the reaction vessel and/or provide energy input to reduce nitrates to nitrogen.

ACCESSION NUMBER: 2003:836374 CAPLUS  
 DOCUMENT NUMBER: 139:327358  
 TITLE: Single stage denitration  
 INVENTOR(S): Mason, Bradley J.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S. Ser. No. 111,148.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003198584	A1	20031023	US 2002-185616	20020628
PRIORITY APPLN. INFO.:			US 2002-111148	A2 20020419

L23 ANSWER 17 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The plasma cell uses catalysis of atomic hydrogen to form novel hydrogen species and/or compns. of matter causing the plasma to become highly energetic, facilitating the formation of diamond from carbon from carbon sources, such as hydrocarbons or graphitic carbon, in a plasma formed or assisted by the catalysis of atomic hydrogen to lower energy states.

ACCESSION NUMBER: 2003:892712 CAPLUS  
 DOCUMENT NUMBER: 139:352262  
 TITLE: Plasma cell diamond reactor for diamond synthesis  
 INVENTOR(S): Mills, Randell L.  
 PATENT ASSIGNEE(S): Blacklight Power, Inc., USA  
 SOURCE: PCT Int. Appl., 129 pp.  
 CODEN: FIKXK2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003093173	A2	20031113	WO 2003-US13412	20030430
WO 2003093173	C1	20040422		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: CH, CM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			US 2002-399739P	P 20020108
			US 2002-376546P	P 20020501
			US 2002-390439P	P 20020624
			US 2003-462705P	P 20030415

L23 ANSWER 19 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A method for producing a crystalline semiconductor film involves using an amorphous semiconductor film having a high O concentration and nucleation d. for promoting the catalytic crystallization and using an amorphous semiconductor film having a low O concentration and a large grain size for becoming the crystalline semiconductor film for the active layer of a TFT. A semiconductor device having an imaging component of the above TFT is also described.

ACCESSION NUMBER: 2003:773887 CAPLUS  
 DOCUMENT NUMBER: 139:268375  
 TITLE: Production of crystalline semiconductor film, thin film transistor, and semiconductor device  
 INVENTOR(S): Shibata, Hiroshi; Maekawa, Shinji  
 PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003282435	A2	20031003	JP 2002-79291	20020320
PRIORITY APPLN. INFO.:			JP 2002-79291	20020320

L23 ANSWER 20 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A process for producing diamines which comprises the steps of: (1) reacting a dialdehyde (e.g., 1,6-hexanedial) with ammonia and hydrogen in the presence of an alc. (e.g., methanol) and a reductive amination catalyst (e.g., Ni/kieselgurh) to synthesize the corresponding diamine (e.g., 1,6-diaminohexane); (2) separating and recovering the alc. by distilling the reaction mixture obtained from step (1); (3) separating the diamine by purifying the distillation residue obtained from (2); and (4) feeding at least part of the alc. recovered in step (2) to step (1); where step (1) comprising maintaining the amount of ammonia at a level of at least 200 mol per mol of the primary amine that has formed in the step (1) and accumulated in the reaction vessel for step (1). The process can produce diamines com. advantageously and in high yields, the diamines having little impurities.

ACCESSION NUMBER: 2003:771363 CAPLUS  
 DOCUMENT NUMBER: 139:277246  
 TITLE: Reductive amination process and catalysts for producing diamines from dialdehydes and ammonia in the presence of alkanols  
 INVENTOR(S): Tokuda, Yoshihiro; Suzuki, Shigeaki  
 PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 4 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1348688	A1	20031001	EP 2003-251898	20030326
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004002294	A2	20040108	JP 2002-371327	20021224
SG 59415	A1	20031027	SG 2003-693	20030219
US 2003187303	A1	20031002	US 2003-377828	20030304
US 6696609	B2	20040224		
CN 1446793	A	20031008	CN 2003-108307	20030327
PRIORITY APPL. INFO.:			JP 2002-87552	A 20020327

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L23 ANSWER 21 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Plasmas comprising an in situ inverted hydrogen population and stationary inverted hydrogen populations not formed by rapid expansion of a plasma into a vacuum are described. Preferably, the stationary inverted hydrogen populations are formed by the catalytic reaction of hydrogen atoms to lower-energy hydrogen atoms. Hydrogen reactors for forming a stationary inverted hydrogen population are described which comprise a cell constructed and arranged for forming a catalysis of atomic hydrogen under conditions that produce lower-energy hydrogen and form a continuous stationary inverted hydrogen population, a source of catalyst for catalyzing the reaction of hydrogen atoms to lower-energy hydrogen atoms, and a source of atomic hydrogen. Comps. comprising 21 neutral, pos., or neg. increased binding energy of hydrogen species having a binding energy greater than the binding energy of the corresponding ordinary hydrogen species, or greater than the binding energy of any hydrogen species for which the corresponding ordinary hydrogen species is unstable or is not observed because the ordinary hydrogen species' binding energy is less than thermal energies at ambient conditions, or is neg.; and 21 other element which are formed during the formation of the inverted hydrogen population are also described. Methods for producing power and lower-energy hydrogen species using the catalyzed reactions are also described. The power may be utilized as laser light or the light due to stimulated or spontaneous emission may be converted to electricity with a photon-to-elec. converter such as a photovoltaic cell.

ACCESSION NUMBER: 2003:633585 CAPLUS  
 DOCUMENT NUMBER: 139:182849  
 TITLE: Hydrogen power, plasma, and reactor for lasing, and power conversion  
 INVENTOR(S): Mills, Randell L.  
 PATENT ASSIGNEE(S): Blacklight Power, Inc., USA  
 SOURCE: PCT Int. Appl., 228 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003066516	A2	20030814	WO 2002-US35872	20021108
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, CZ, CH, CN, CO, CR, CU, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPL. INFO.:			US 2001-331308P	P 20011114
			US 2001-342114P	P 20011226
			US 2002-399739P	P 20020108

L23 ANSWER 21 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN (Continued)  
 US 2002-380846P P 20020517  
 US 2002-385892P P 20020606  
 US 2002-398135P P 20020725

L23 ANSWER 22 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB There is provided a process for hydrocarbon synthesis wherein a supported metal catalyst for hydrogenating carbon monoxide to form a mixture of hydrocarbons is regenerated by decreasing its hydrocarbon content, impregnating under a non-oxidative atmosphere with a solution of at least one member of the group of ammonium salts (e.g., ammonium acetate), alkylammonium salts, and weak organic acids, optionally including ammonia, oxidizing with a gaseous oxidant (e.g., air) in the presence of the impregnating solution, activating the catalyst by reduction with hydrogen at elevated temps., and reusing the catalyst. The treatment may be carried out in a single reactor, or by carrying out all of the steps after catalyst has been withdrawn therefrom and returned to at least one reactor. Up to all steps subsequent to decreasing the hydrocarbon content may be affected in a subsequent reactor, or in specialized apparatus

ACCESSION NUMBER: 2003:610353 CAPLUS  
 DOCUMENT NUMBER: 139:151409  
 TITLE: Process for Fischer-Tropsch catalyst regeneration in the manufacture of C10+ hydrocarbons from synthesis gas  
 INVENTOR(S): Koveal, Russell John; Daage, Michel; Shen, Eric  
 PATENT ASSIGNEE(S): ExxonMobil Research and Engineering Company, USA  
 SOURCE: PCT Int. Appl., 50 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003064356	A1	20030807	WO 2003-US202	20030103
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SI, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, CZ, CH, CN, CO, CR, CU, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003166451	A1	20030904	US 2002-59916	20020129
US 6753354	B2	20040622		
PRIORITY APPL. INFO.:			US 2002-59916	A 20020129

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L23 ANSWER 23 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A process for activating a supported metal catalyst or catalyst precursor useful for the hydrogenation of carbon monoxide to form a mixture of hydrocarbons, comprising reducing with a hydrogen-containing gas at elevated temperature so that at least a portion is in the metallic state, impregnating under a non-oxidizing atmosphere with a solution of at least one member selected from the group consisting of ammonium salts, alkyl ammonium salts and weak organic acids, optionally further including ammonia, to the point where it has absorbed a volume of solution equal to at least .apprx.10% of its calculated pore volume, oxidizing with a gaseous oxidant in the presence of the impregnating solution and reducing with hydrogen-containing gas at elevated temps. to form an active catalyst. The steps beginning with the impregnation may be repeated. Optionally, the catalyst may be calcined after the oxidation step and/or passivated after activation.

ACCESSION NUMBER: 2003:590799 CAPLUS  
 DOCUMENT NUMBER: 139:119732  
 TITLE: Supported catalyst activation  
 INVENTOR(S): Clark, Janet Renee; Daage, Michel; Koveal, Russell John  
 PATENT ASSIGNEE(S): Exxonmobil Research and Engineering Co., USA  
 SOURCE: U.S. Pat. Appl. Publ., 9 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003144130	A1	20030731	US 2002-59918	20020129
US 6753351	B2	20040622		
WO 2003068396	A1	20030821	WO 2003-US191	20030103

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, BR, BU, BU, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, GU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-59918 A 20020129

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS

FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L23 ANSWER 25 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The chemical microreactor that provides a means to generate hydrogen fuel from liquid sources such as ammonia, methanol, and butane through steam reforming processes when mixed with an appropriate amount of water contains capillary microchannels with integrated resistive heaters to facilitate the occurrence of catalytic steam reforming reactions. Two distinct embodiment styles are discussed. One embodiment style employs a packed catalyst capillary microchannel and at least one porous membrane. Another embodiment style employs a porous membrane with a large surface area or a porous membrane support structure containing a plurality of porous membranes having a large surface area in the aggregate, i.e., greater than .apprx.1 m<sup>2</sup>/cm<sup>3</sup>. Various methods to form packed catalyst capillary microchannels, porous membranes and porous membrane support structures are also disclosed.

ACCESSION NUMBER: 2003:435047 CAPLUS  
 DOCUMENT NUMBER: 139:18725  
 TITLE: Chemical microreactor and method thereof  
 INVENTOR(S): Morse, Jeffrey D.; Jankowski, Alan  
 PATENT ASSIGNEE(S): The Regents of the University of California, USA  
 SOURCE: U.S. Pat. Appl. Publ., 12 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003103878	A1	20030605	US 2001-7412	20011205
WO 2004030805	A1	20040415	WO 2002-US39100	20021205

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, BR, BU, BU, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-7412 A 20011205

L23 ANSWER 24 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Supported metal catalysts for the hydrogenation of carbon monoxide to form a mixture of hydrocarbons are regenerated by decreasing the hydrocarbon content of the catalyst, preferably by contact with hydrogen-containing gas at elevated temps., impregnating under a non-oxidizing atmosphere with a solution of at least one of an ammonium salt and an alkyl ammonium salt, optionally in combination with up to five moles of ammonia per l of solution to the point where it has absorbed a volume of solution equal to at least .apprx.10% of its calculated pore volume; oxidizing the catalyst with a gaseous oxidant in the presence of the impregnating solution and activating the catalyst by reduction with hydrogen at elevated temps. Optionally, the catalyst is calcined after the oxidation step, and passivated after the activation step.

ACCESSION NUMBER: 2003:590797 CAPLUS  
 DOCUMENT NUMBER: 139:119730  
 TITLE: Supported catalyst treatment  
 INVENTOR(S): Daage, Michel; Koveal, Russell John; Clark, Janet Renee; Harler, David Owen  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 13 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003144128	A1	20030731	US 2002-59928	20020129
WO 2003064040	A1	20030807	WO 2002-US41513	20021227

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, BR, BU, BU, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-59928 A 20020129

L23 ANSWER 26 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A method for producing ethylamines and butylamines and ethylamine and butylamine mixts. comprises: (i) hydroamination of butadiene and ethylene with a monoalkylamine and/or dialkylamine (alkyl may be substituted by Et and/or Bu) in the presence of an alkali metal amide as catalyst; (ii) isomerization of the amine obtained during hydroamination (i), optionally after (iia) separating into specific fractions and/or (iib) in hydrogenation conditions and/or (iic) in the presence of ammonia; and (iii) separating the product mixture obtained, isolating the desired amine produced and recycling to step (i) the appropriate amine as educt.

ACCESSION NUMBER: 2003:396836 CAPLUS  
 DOCUMENT NUMBER: 138:403327  
 TITLE: Method and device for producing ethylamines and butylamines  
 INVENTOR(S): Steinhilber, Ulrich; Funke, Frank; Boehling, Ralf  
 PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany  
 SOURCE: PCT Int. Appl., 44 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003042157	A1	20030522	WO 2002-EP12609	20021112

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, BR, BU, BU, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 10155524 A1 20030522 DE 2001-10155524 20011112

PRIORITY APPLN. INFO.: DE 2001-10155524 A 20011112

OTHER SOURCE(S): CASREACT 138:403327  
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L23 ANSWER 27 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Isophorondiamine (3-aminomethyl-3,5,5-trimethylcyclohexylamine) with a cis-/trans-isomer ratio of at least 70/30 is produced by reacting isophoronenitrile (3-cyano-3,5,5-trimethylcyclohexanone), ammonia and hydrogen in the presence of a hydrogenation catalyst at temperature from 50 to 200° and pressure from 50 to 300 bar, the catalyst comprising 0.03% of alkali metals calculated as oxides. The isophorondiamine can be produced in a two-step process by reacting isophoronenitrile, ammonia and hydrogen at 20-150° and 50-300 bar in the presence of imination catalysts, followed by reaction at 60-100 and 50-300 bar in the presence of hydrogenation catalysts. The hydrogenation catalysts having low amts. of alkali metals are produced by (a) precipitating transition metal carbonates, hydroxides or oxides by reacting their aqueous salt solns. with ammonium salts, ammonium hydroxide or uretropin, (b) drying the ppts. at 50-200° and grinding, (c) suspending and spray-drying at 100-600°, (d) calcinating at 300-1,000° and forming shaped catalysts, (e) reducing the shaped catalysts in hydrogen/nitrogen atmospheric, and (f) optionally, surface-oxidizing the catalysts at 20-60°, the catalysts being optionally promoted at steps (c), (d) and (f). Thus, a hydrogenation catalyst was produced according to the invention method, the catalyst comprising cobalt (76), manganese (4.2) and phosphorus (1.8) promoters, sodium (< 0.01%) and oxygen in the form of oxides, to the

balance. The catalyst was used for reductive amination/hydrogenation of isophoronenitrile to yield 92.5% of isophoronediamine having cis-/trans- ratio of 75.8.  
 ACCESSION NUMBER: 2003:202544 CAPLUS  
 DOCUMENT NUMBER: 138:221975  
 TITLE: Production of isophoronediamine using hydrogenation catalysts containing low amounts of alkali metals  
 INVENTOR(S): Funke, Frank; Hill, Thomas; Meider, Johann-Peter; Schwab, Ekkehard; Himmel, Walter; Henkes, Erhard; Petersen, Hermann; Koerner, Reinhard  
 PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany  
 SOURCE: PCT Int. Appl., 28 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003020421	A1	20030313	WO 2002-EP9600	20020828
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
DE 10142635	A1	20030320	DE 2001-10142635	20010831

L23 ANSWER 28 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The present invention relates to a method of carrying out hydrogenation of a substrate (e.g., aniline) in the presence of a supercrit. fluid such that more than one phase is present in the reaction medium. The reaction is performed under continuous conditions. The process leads to improved yields of the desired hydrogenated product (e.g., cyclohexylamine). The process also enables the selective formation of a particular product where the formation of more than one product is possible; a process flow diagram is presented.  
 ACCESSION NUMBER: 2002:793577 CAPLUS  
 DOCUMENT NUMBER: 137:296565  
 TITLE: Supercritical hydrogenation of substrates  
 INVENTOR(S): Ross, Stephen Keith; Meehan, Nicola Jane; Poliakoff, Martyn; Carter, Daniel N.  
 PATENT ASSIGNEE(S): Thomas Swan & Co. Ltd., UK  
 SOURCE: PCT Int. Appl., 20 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002081414	A2	20021017	WO 2002-GB1387	20020404
WO 2002081414	A3	20021212		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
GB 2374071	A1	20021009	GB 2001-8775	20010406
EP 1373166	A2	20040102	EP 2002-718304	20020404
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
PRIORITY APPLN. INFO.:			GB 2001-8775	A 20010406
			WO 2002-GB1387	W 20020404

L23 ANSWER 27 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 EP 1425096 A1 20040609 EP 2002-797635 20020828  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK  
 PRIORITY APPLN. INFO.: DE 2001-10142635 A 20010831  
 WO 2002-EP9600 W 20020828

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 29 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Photocatalytic reduction of nitrate ion (NO3-) in an aqueous suspension of metal-loaded titanium(IV) oxide (TiO2) was examined in the presence of oxalic acid (OA) as a hole scavenger. Conversion of NO3- into ammonia (NH3) competed with hydrogen liberation, and the NH3 production selectivity increased with the order of loaded metal, (Pl, Pd, Co) < (Ni, Au) < (Ag, Cu), which was attributable to the efficiency of reduction of protons by photogenerated electrons at the loaded metal, i.e., hydrogen overvoltage of the loaded metal. TiO2 powder loaded with Cu showed higher NH3 yield and selectivity as well as higher efficiency of OA consumption. TiO2 with in situ deposited Cu gave results comparable to those of a Cu pre-loaded photocatalyst.  
 ACCESSION NUMBER: 2001:883494 CAPLUS  
 DOCUMENT NUMBER: 136:175356  
 TITLE: Effective photocatalytic reduction of nitrate to ammonia in an aqueous suspension of metal-loaded titanium(IV) oxide particles in the presence of oxalic acid  
 AUTHOR(S): Kominami, Hiroshi; Furusho, Akitoshi; Murakami, Shin-Ya; Inoue, Hiroyuki; Kera, Yoshiya; Ohtani, Bunsho  
 CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Science and Engineering, Kinki University, Osaka, 577-8502, Japan  
 SOURCE: Catalysis Letters (2001), 76(1-2), 31-34  
 CODEN: CALEER; ISSN: 1011-372X  
 PUBLISHER: Kluwer Academic/Plenum Publishers  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 30 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process for the production of 6-aminocaproamide comprising reacting 5-cyanovalearamide with hydrogen in the presence of a metal catalyst. The 6-aminocaproamide is useful, for example, in the production of caprolactam and nylon 6.  
 ACCESSION NUMBER: 2001:762962 CAPLUS  
 DOCUMENT NUMBER: 135:304262  
 TITLE: Hydrogenation process and catalysts for preparing 6-aminocaproamide from 5-cyanovalearamide  
 INVENTOR(S): Koch, Theodore August; Allgeier, Alan Martin; Harper, Mark Jay; Sengupta, Sourav Kumar  
 PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA  
 SOURCE: PCT Int. Appl., 19 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001077068	A2	20011018	WO 2001-US9951	20010328
WO 2001077068	A3	20020808		
W: BR, CA, CN, ID, JP, KR, MX, SG				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
US 6331624	B1	20011218	US 2000-543766	20000405
EP 1268402	A2	20030102	EP 2001-924403	20010328
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
JP 2003530380	T2	20031014	JP 2001-575544	20010328
BR 2001009894	A	20040210	BR 2001-9894	20010328
PRIORITY APPLN. INFO.:			US 2000-543766	A 20000405
			WO 2001-US9951	W 20010328

L23 ANSWER 31 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Fe catalysts supported on inorg. oxides have been prepared by impregnation method. Their catalytic activities for the methanation of carbon dioxide are investigated. The oxide supports, in order of influence on the activity of Fe catalyst are titania > zirconia > sepiolite > alumina > silica. Both the conversion of carbon dioxide and the selectivity of methane strongly depend on the GHSV and the composition of feedstock. The ammonia treatment of Fe catalysts before calcination favors the methanation reaction. The introductions of other VIII group or non-VIII group metals influence the catalytic activities effectively.

ACCESSION NUMBER: 2001:610348 CAPLUS  
 DOCUMENT NUMBER: 135:332706  
 TITLE: Methanation of carbon dioxide on supported iron catalysts  
 AUTHOR(S): Jiang, Qi  
 CORPORATE SOURCE: Department of Chemical Engineering, South China University of Technology, Canton, 510641, Peop. Rep. China  
 SOURCE: Yingyong Huaxue (2001), 18(7), 536-539  
 CODEN: YIHUED; ISSN: 1000-0518  
 PUBLISHER: Yingyong Huaxue Bianji Weiyuanhui  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese

L23 ANSWER 32 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process for synthesizing alkanolamines and/or alkyleneamines by reacting either an alkane, an alkene, or both with a source of oxygen and a source of nitrogen and, optionally, addnl. hydrogen to convert the alkane and/or alkene by selective partial oxidative amination to at least one of the desired end products (e.g., triethanolamine), using a regenerable catalyst, is described.

ACCESSION NUMBER: 2001:338475 CAPLUS  
 DOCUMENT NUMBER: 134:328211  
 TITLE: Process and catalysts for synthesizing aliphatic, cyclic and aromatic alkanolamines and alkyleneamines  
 INVENTOR(S): Bhasin, Madan Mohan; King, Stephen Wayne  
 PATENT ASSIGNEE(S): Union Carbide Chemicals & Plastics Technology Corporation, USA  
 SOURCE: PCT Int. Appl., 31 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001032600	A1	20010510	WO 2000-US29681	20001027
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NC, NE, NI, NO, NZ, OM, PA, PE, PG, PH, PK, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6281387	B1	20010828	US 1999-430634	19991029
US 2001044557	A1	20011122	US 2001-894466	20010628
PRIORITY APPLN. INFO.:			US 1999-430634	A 19991029

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 33 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title apparatus comprises means for catalytic reduction of NOx in exhaust gas duct under controlled atmospheric, means for injecting the main fuel via a valve into the combustion chamber, means for monitoring the temperature in the combustion chamber, and means for controlling the timing of secondary fuel injection via the valve arranged inside the tube in system expansion stroke or the exhaust stroke. The catalysts may contain Pt, Pd, Rh, Ir, and Zr transition metal oxides of Cu, Fe, Co, Ni, Cr, V, or Ti on porous zeolite or alumina support. The reducing agent is preferably NH3, CO and/or H2.

ACCESSION NUMBER: 2001:19195 CAPLUS  
 DOCUMENT NUMBER: 134:90320  
 TITLE: Apparatus for treating exhaust gases from internal-combustion engine  
 INVENTOR(S): Harada, Yasuo; Hayashi, Kotaro  
 PATENT ASSIGNEE(S): Toyota Motor Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001003794	A2	20010109	JP 1999-171296	19990617
PRIORITY APPLN. INFO.:			JP 1999-171296	19990617

L23 ANSWER 34 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB A catalyst composition, a process for producing the composition and a hydrotreating conversion process are disclosed. The composition comprises a zeolite having incorporated therein a promoter comprising a metal carbide or a metal nitride. The composition can be produced by incorporating a metal compound into the zeolite followed by thermal treatment of the resulting zeolite with a hydrocarbon, preferably in the presence of hydrogen, or with ammonia. The hydrotreating process comprises contacting a hydrocarbon-containing fluid with the catalyst composition under a condition sufficient to effect the reduction of sulfur content in the hydrocarbon-containing fluid.  
ACCESSION NUMBER: 2000:253003 CAPLUS  
DOCUMENT NUMBER: 132:267398  
TITLE: Hydrotreating catalyst composition and processes therefor and therewith  
INVENTOR(S): Wu, An-Hsiang; Drake, Charles A.  
PATENT ASSIGNEE(S): Phillips Petroleum Co., USA  
SOURCE: U.S., 7 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6051520	A	20000418	US 1998-81110	19980519
PRIORITY APPLN. INFO.:			US 1998-81110	19980519

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS  
FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L23 ANSWER 35 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB The production of olefins from hydrocarbons comprises: (A) providing a first feed stream comprising a gaseous fuel (e.g., ethane) and an oxygen-containing gas; (B) contacting the first feed stream with a first catalyst under conditions so as to produce a product stream and unreacted oxygen; (C) providing a second feed stream comprising a hydrocarbon feedstock; and (D) contacting the second feed stream, the product stream of step B, and the unreacted oxygen of step B with a second catalyst which is capable of supporting oxidation, thereby consuming a part of the unreacted oxygen to produce an olefin (e.g., ethylene). This process provides alternative or addnl. sources of heat to drive the cracking step of the auto-thermal cracking process.  
ACCESSION NUMBER: 2000:175773 CAPLUS  
DOCUMENT NUMBER: 132:208271  
TITLE: Process for the production of olefins from hydrocarbons using alternative or additional sources of heat to drive the cracking step of the auto-thermal cracking process  
INVENTOR(S): Griffiths, David Charles; Oehlers, Cord; Reid, Ian Allan Beattie  
PATENT ASSIGNEE(S): BP Chemicals Limited, UK  
SOURCE: PCT Int. Appl., 21 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000014036	A1	20000316	WO 1999-GB2965	19990907
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2343272	AA	20000316	CA 1999-2343272	19990907
AU 9957514	A1	20000327	AU 1999-57514	19990907
AU 754209	B2	20021107		
TR 200100686	T2	20010621	TR 2001-200100686	19990907
EP 1112241	A1	20010704	EP 1999-944693	19990907
EP 1112241	B1	20030219		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO				
JP 2002524582	T2	20020806	JP 2000-568796	19990907
AT 232846	E	20030315	AT 1999-944693	19990907
RU 2209202	C2	20030727	RU 2001-108533	19990907
ES 2193745	T3	20031101	ES 1999-944693	19990907
US 6433234	B1	20020813	US 2000-659510	20000911
ZA 2002001831	A	20020605	ZA 2001-1831	20010305
NO 2001001160	A	20010508	NO 2001-1160	20010307

L23 ANSWER 35 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN (Continued)  
PRIORITY APPLN. INFO.: GB 1998-19603 A 19980908  
WO 1999-GB2965 W 19990907

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS  
FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L23 ANSWER 36 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB Metal oxides having a perovskite or perovskite-like crystal structure are prepared by subjecting a mixture of starting powders to high energy milling sufficient to induce chemical reaction of the components and thereby directly mechanosynthesize the metal oxides having a nanocryst. structure as determined by X-ray diffractometry. The process is simple, efficient, not expensive and does not require a heating step for producing a perovskite that may have a very high sp. surface area. Another advantage is that the perovskite obtained also has a high d. of lattice defects, showing a higher catalytic activity, a characteristic which is highly desirable in applications such as catalysts and electronic conductors.

ACCESSION NUMBER: 2000:68399 CAPLUS  
DOCUMENT NUMBER: 132:124910  
TITLE: Process for synthesizing metal oxides and metal oxides having a perovskite or perovskite-like crystal structure by milling  
INVENTOR(S): Kaliaquine, Serge; Van Neste, Andre  
PATENT ASSIGNEE(S): Universite Laval, Can.  
SOURCE: PCT Int. Appl., 44 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000003947	A1	20000127	WO 1999-CA638	19990715
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6017504	A	20000125	US 1998-116732	19980716
CA 2337002	AA	20000127	CA 1999-2337002	19990715
AU 9945974	A1	20000207	AU 1999-45974	19990715
AU 757460	B2	20030220		
EP 1098843	A1	20010516	EP 1999-928973	19990715
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002520248	T2	20020709	JP 2000-560061	19990715
NZ 509815	A	20030530	NZ 1999-509815	19990715
US 6770256	B1	20040803	US 2001-743985	20010409
PRIORITY APPLN. INFO.:			US 1998-116732	A2 19980716
			WO 1999-CA638	W 19990715

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L23 ANSWER 37 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB 6-Aminocapronitrile (I) and/or hexamethylenediamine (II) are prepared in high yield and selectivity by hydroformylating 3-pentenitrile with synthesis gas, isolating a formylvaleronitrile (FVN) isomer mixture from the hydroformylation reaction product, reductively aminating the FVN isomer mixture, and isolating I and/or II by fractional distillation from the reductive amination reaction product.

ACCESSION NUMBER: 1999:733058 CAPLUS  
 DOCUMENT NUMBER: 131:323041  
 TITLE: Process and catalysts for the production of 6-aminocapronitrile and/or hexamethylenediamine from 3-pentenitrile using hydroformylation and reductive amination

INVENTOR(S): Bunel, Emilio Enrique; Koch, Theodore August; Ozer, Ronnie; Phillips, Shawn Homer; Sengupta, Sourav Kumar  
 PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5986126	A	19991116	US 1999-236520	19990125
CN 1266056	A	20000913	CN 2000-101663	20000125
TW 483882	B	20020421	TW 2000-89101173	20000125
PRIORITY APPLN. INFO.:			US 1999-236520	A 19990125

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 38 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A simple and single-step process for producing caprolactam comprises reacting 5-formylvaleric acid or an ester OHC(CH<sub>2</sub>)<sub>4</sub>CO<sub>2</sub>R (R = H, C<sub>1</sub>-8 alkyl, aryl, cycloalkyl) in a solvent of water and/or an alc. with hydrogen and ammonia in the presence of a noble metal catalyst supported on a carrier at 80-300°/10-120 atm, whereby amination, acidification, dehydration and cyclization occur to produce caprolactam in high yield and selectivity.

ACCESSION NUMBER: 1999:705052 CAPLUS  
 DOCUMENT NUMBER: 131:299814  
 TITLE: Process and catalysts for preparing caprolactam by the reaction of 5-formylvaleric acid and esters with hydrogen and ammonia

INVENTOR(S): Chu, Shiao-Jung; Hsu, Hsi-Yen; Lin, Ching-Tang; Lai, Kwang-Chic; Tsai, J. H.  
 PATENT ASSIGNEE(S): Industrial Technology Research Institute, Taiwan; Acelon Chemicals & Fiber Corporation  
 SOURCE: U.S., 7 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5977356	A	19991102	US 1997-887174	19970702
PRIORITY APPLN. INFO.:			US 1997-887174	19970702

OTHER SOURCE(S): MARPAT 131:299814  
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 39 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The SOX-catching materials comprise components for oxidizing SO<sub>2</sub> to SO<sub>3</sub>, and components for catching SO<sub>x</sub>. The SO<sub>2</sub>-oxidizing components are Pt-group metals (i.e., Pt, Rh, Pd), while the SO<sub>x</sub>-catching components are selected from Ti, Zr, Fe, Ni, Ag, Zn, and Sn. Engine exhaust gas-purification apparatus contain the SOX-catching materials. In purification of engine exhaust gas generated in lean-burn combustion, SO<sub>x</sub> is caught by the SOX-catching materials, and then the exhaust gas atmospheric is changed to reducing atmospheric to recover the SOX-catching ability of the materials. In the purification method, (A) Zr selected from gasoline, gas oils, kerosene, natural gas, their reformed products, H<sub>2</sub>, alcs., and NH<sub>3</sub>, and/or (B) engine blow-by gas and/or canister purge gas may be added to form the reducing atmospheric. The SOX-catching materials and the purification method prevent poisoning of three way catalysts by SO<sub>x</sub>.

ACCESSION NUMBER: 1999:406779 CAPLUS  
 DOCUMENT NUMBER: 131:48523  
 TITLE: Materials for catching sulfur oxides in engine exhaust gas, and apparatus and method of purification of engine exhaust gas

INVENTOR(S): Okiude, Kojiro; Kuroda, Osamu; Yamashita, Toshio; Doi, Ryota; Ogawa, Toshio; Fujitani, Morio; Iizuka, Hidehiro; Azukibata, Shigeru; Kitahara, Yuichi; Shinotsuka, Norihiro  
 PATENT ASSIGNEE(S): Hitachi, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11169708	A2	19990629	JP 1997-344682	19971215
PRIORITY APPLN. INFO.:			JP 1997-344682	19971215

L23 ANSWER 40 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Flue gases containing NF<sub>3</sub> are treated by reduction with H<sub>2</sub> or NH<sub>3</sub> in the presence of solid catalyst bed in a concentric tubular reactor comprising means for blowing a reducing gas into the downflow side of the solid catalyst bed at 150-800°, and means for supply water into the heat-exchange duct under the catalyst bed to control its temperature >120° for preventing the plugging of crystalline NH<sub>4</sub>F·HF deposits on inner surface of the process pipings. The solid catalyst may be >1 metals of Fe, Co, Ni, Cu, Zn, Ru, Pd, Rh, Ag, Ir, Pt, and/or Au. The apparatus is safe to operate and reduces lining cost.

ACCESSION NUMBER: 1999:224326 CAPLUS  
 DOCUMENT NUMBER: 130:241479  
 TITLE: Apparatus and method for removing nitrogen trifluoride from flue gases by catalytic reduction

INVENTOR(S): Harada, Isao; Jinbo, Takashi  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11090179	A2	19990406	JP 1997-258966	19970924
PRIORITY APPLN. INFO.:			JP 1997-258966	19970924

L23 ANSWER 41 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title process comprises mixing NF<sub>3</sub>- and O-containing waste gases with reducing gases after removing at least a part of O from the gases. The reducing gas may be H or NH<sub>3</sub>. The reaction may be carried out in the presence of catalysts such as Fe, Co, Ni, Cu, Zn, Ru, Rh, Pd, Ag, Ir, Pt, and/or Au at 0-600°. The title apparatus has a waste gas inlet, an O separation unit, a reactor for reduction, and a unit to remove the F compds. generated. The process is useful for removal of NF<sub>3</sub> from cleaning gases in semiconductor manufacturing.

ACCESSION NUMBER: 1999:65092 CAPLUS  
 DOCUMENT NUMBER: 130:129222  
 TITLE: Process and apparatus for removal of nitrogen trifluoride from waste gases  
 INVENTOR(S): Jinbo, Takashi; Yasutake, Takeshi; Harada, Isao; Wachi, Hiroko  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11019471	A2	19990126	JP 1997-174476	19970630
PRIORITY APPLN. INFO.:			JP 1997-174476	19970630

L23 ANSWER 42 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB It has been shown that it is possible to decrease fuel-NOx produced from NH<sub>3</sub> using catalytic combustion of a synthetic gasified biomass at fuel-lean conditions. In a certain temperature regime where the conversion of fuel components, such as CO, H<sub>2</sub> and CH<sub>4</sub>, is low and conversion of NH<sub>3</sub> is high, it is suggested that the formed NOx is reduced by the remaining fuel components, mainly hydrocarbons. With oxide catalysts only ca. 10% of the NH<sub>3</sub> was converted to NOx, the rest to N<sub>2</sub>. It has also been shown that the ignition sequence of CO, H<sub>2</sub> and CH<sub>4</sub> varied for different catalysts and different exptl. conditions, and that methane coupling and methanation reactions occurred before ignition of CH<sub>4</sub>.

ACCESSION NUMBER: 1998:780675 CAPLUS  
 DOCUMENT NUMBER: 130:112594  
 TITLE: Circumventing fuel-NOx formation in catalytic combustion of gasified biomass  
 AUTHOR(S): Magnus Johansson, E.; Jaras, Sven G.  
 CORPORATE SOURCE: Chemical Technology, KTH - Royal Institute of Technology, Stockholm, S-100 44, Swed.  
 SOURCE: Catalysis Today (1999), 47(1-4), 359-367  
 CODEN: CATTEA; ISSN: 0920-5861  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 22  
 THIS: THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 43 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The present invention provides a novel oligomeric olefin monoamine for use as an additive in fuel and related products and a method of producing the same. The oligomeric olefin monoamine is free of any undesirable halogens. The method of making the oligomeric olefin includes the steps of forming an oligomeric olefin epoxide, converting the epoxide to an alc. and then converting the alc. through the use of ammonia to an oligomeric olefin monoamine.

ACCESSION NUMBER: 1998:479564 CAPLUS  
 DOCUMENT NUMBER: 129:111228  
 TITLE: Monoamine fuel additives and a method of making the same  
 INVENTOR(S): Dever, James L.; Baldwin, Larry J.; Kinder, James D.  
 PATENT ASSIGNEE(S): Ferro Corp., USA  
 SOURCE: PCT Int. Appl., 27 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9828346	A1	19980702	WO 1997-US22064	19971217
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5810894	A	19980922	US 1996-770245	19961220
AU 9856894	A1	19980717	AU 1998-56894	19971217
EP 946607	A1	19991006	EP 1997-953078	19971217
R: DE, ES, FR, GB, IT				
JP 2001507063	T2	20010529	JP 1998-528768	19971217
MX 9903924	A	20000731	MX 1999-3924	19990428
PRIORITY APPLN. INFO.:			US 1996-770245	A 19961220
			WO 1997-US22064	W 19971217

REFERENCE COUNT: 7  
 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L23 ANSWER 44 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Ru-, Ni- and/or Co-containing catalysts used for the title purpose, especially for amination of H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH with NH<sub>3</sub> to manufacture H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> with improved selectivity, comprise 6-50% (based on total catalyst weight) Co and/or Ni, 0.001-25% Ru, 0-10% Cu and also 0.5% Fe, Rh, Pd, etc., as catalyst promoters, on a metal oxide support. The catalysts are free from corrosive chlorides and having improved stability in continuous operation. A typical catalyst (preparation given) contained Ru 1, Ni 7.9, Co 7.9 and Cu 3.2% on Al<sub>2</sub>O<sub>3</sub> support.

ACCESSION NUMBER: 1998:300824 CAPLUS  
 DOCUMENT NUMBER: 128:323139  
 TITLE: Catalysts for amination of alkylene oxides, alcohols, aldehydes and ketones  
 INVENTOR(S): Wulff-Doring, Joachim; Melder, Johann-Peter; Schulz, Gerhard; Volt, Guido; Gutschoven, Frank; Harder, Wolfgang  
 PATENT ASSIGNEE(S): Basf A.-G., Germany  
 SOURCE: Eur. Pat. Appl., 8 pp.  
 CODEN: EPXDXW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 839575	A2	19980506	EP 1997-118717	19971028
EP 839575	A3	19980812		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19645047	A1	19980507	DE 1996-19645047	19961031
US 5958825	A	19990928	US 1997-955121	19971021
JP 10174875	A2	19980630	JP 1997-296886	19971029
CN 1185995	A	19980701	CN 1997-122818	19971031
PRIORITY APPLN. INFO.:			DE 1996-19645047	19961031

OTHER SOURCE(S): MARPAT 128:323139



L23 ANSWER 45 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Ru-, Ni- and/or Co-containing catalysts are used for the title purpose, especially for amination of H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH with NH<sub>3</sub> to manufacture H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub> with improved selectivity. The catalysts contain decreased amts. of Ni or Co and have improved stability in continuous operation. A typical catalyst (preparation given) contained Ru 1, Ni 0.79, Co 0.79 and Cu 1.6% on Al<sub>2</sub>O<sub>3</sub> support.

ACCESSION NUMBER: 1998:300823 CAPLUS  
 DOCUMENT NUMBER: 128:323138  
 TITLE: Catalysts for amination of alkylene oxides, alcohols, aldehydes and ketones  
 INVENTOR(S): Wulff-Doring, Joachim; Melder, Johann-Peter; Schulz, Gerhard; Voit, Guido; Gutschoven, Frank; Harder, Wolfgang  
 PATENT ASSIGNEE(S): Basf A.-G., Germany  
 SOURCE: Eur. Pat. Appl., 9 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 839574	A2	19980506	EP 1997-118631	19971027
EP 839574	A3	19980812		
EP 839574	B1	20010530		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19644107	A1	19980507	DE 1996-19644107	19961031
US 5916838	A	19990629	US 1997-955264	19971021
ES 2158423	T3	20010901	ES 1997-118631	19971027
JP 10174874	A2	19980630	JP 1997-296775	19971029
CN 1181284	A	19980513	CN 1997-121251	19971030
CN 1124179	B	20031015		
US 6046359	A	20000404	US 1999-262262	19990304
PRIORITY APPLN. INFO.:			DE 1996-19644107	A 19961031
			US 1997-955264	A3 19971021

OTHER SOURCE(S): MARPAT 128:323138

L23 ANSWER 47 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Heavy crude oil containing >1 weight% water is hydrotreated and upgraded while being produced downhole in a production well. During production the heavy crude oil containing water is subjected to sonic energy at a low frequency of 400 Hz to 10 kHz downhole in the presence of a metal hydrogenation catalyst that causes the water in the crude oil to react and form hydrogen which then hydrotreats and upgrades the heavy crude oil during production. In another embodiment, if the heavy crude oil does not contain water, the hydrogen may be formed in-situ by contacting the heavy crude oil downhole with a chemical compound comprising ammonia, hydrazine and formalic acid that in the presence of a metal hydrogenation catalyst and sonic energy causes the chemical compound to react and form hydrogen which then hydrotreats the heavy crude oil during production. Suitable catalysts include nickel on zinc dust, platinum on carbon and palladium on carbon, preferably nickel on zinc dust. The hydrotreated and upgraded heavy crude oil has improved properties making it easier to refine and transport by pipeline. The upgrading includes reducing the amount of asphaltenes and resins in the heavy crude oil and increasing the amount of aroma. and sats.

ACCESSION NUMBER: 1997:309824 CAPLUS  
 DOCUMENT NUMBER: 126:280044  
 TITLE: Method for hydrotreating and upgrading heavy crude oil during production  
 INVENTOR(S): Davis, Robert Michael; Paul, James Mark  
 PATENT ASSIGNEE(S): Davis, Robert Michael, USA; Paul, James Mark  
 SOURCE: Can. Pat. Appl., 28 pp.  
 CODEN: CFXMBE  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2179573	AA	19970112	CA 1996-2179573	19960620
US 5824214	A	19981020	US 1995-504052	19950711
PRIORITY APPLN. INFO.:			US 1995-504052	19950711

L23 ANSWER 46 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Nitrobenzenes are reductively coupled to azo- and azoxybenzenes using a hydrogen-free reducing agent and heterogeneous redox catalyst in a reduced form at elevated temperature in the gas phase. The catalyst is based on Bi, V, Cr, Mn, Fe, Co, Pb, Mo, Ce, U, Sn, Sb, Cu, La, W, Nb, Pd, Pt, Ni, and/or In and its average oxidation state is at least 0.5 below that of its maximum in the system; the catalyst may be regenerated with the reducing agent in a sep. stage. Reaction times are reduced and yields are improved in comparison with prior-art methods and the process avoids over-reduction to anilines. In an example, a catalyst with composition 6.7% Bi<sub>2</sub>O<sub>3</sub> and 93.3% TiO<sub>2</sub> was used for >36 cycles without deactivation for production of azobenzene from PhNO<sub>2</sub>.

ACCESSION NUMBER: 1997:801913 CAPLUS  
 DOCUMENT NUMBER: 128:49450  
 TITLE: Reductive coupling of nitrobenzenes to the corresponding azobenzenes and azoxybenzenes and redox catalysts therefor  
 INVENTOR(S): Hagemeyer, Alfred; Heineke, Daniel; Voit, Guido; Witzel, Tom  
 PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany  
 SOURCE: Eur. Pat. Appl., 14 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 811606	A2	19971210	EP 1997-109057	19970604
EP 811606	A3	19980415		
EP 811606	B1	20020102		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
DE 19622644	A1	19971211	DE 1996-19622644	19960605
DE 19633552	A1	19980226	DE 1996-19633552	19960820
CN 1174831	A	19980304	CN 1997-114994	19970605
JP 10081658	A2	19980331	JP 1997-147682	19970605
US 5917023	A	19990629	US 1997-869760	19970605
TW 382012	B	20000211	TW 1997-86107745	19970605
PRIORITY APPLN. INFO.:			DE 1996-19622644	A 19960605
			DE 1996-19633552	A 19960820

L23 ANSWER 48 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In the title process, ethanolamine and ammonia are reacted in the presence of hydrogen and various reductive amination catalysts (e.g., nickel or nickel-rhenium on transitional alumina carriers) to yield high selectivity to acyclic products such as (aminoethyl)ethanolamine, while reducing the production of cyclic byproducts (e.g., piperazine). The process may also be carried out in the presence of hydrotaalcite-like or taxovite-like catalysts which have been enhanced by the use of promoters (e.g., Group IA, IIA, IIB metals or oxides).

ACCESSION NUMBER: 1997:128002 CAPLUS  
 DOCUMENT NUMBER: 126:199263  
 TITLE: Reductive amination process and catalysts for the selective production of (aminoethyl)ethanolamine from ethanolamine  
 INVENTOR(S): King, Stephen W.  
 PATENT ASSIGNEE(S): Union Carbide Chemicals and Plastics Technology Corporation, USA  
 SOURCE: U.S., 12 pp., Cont. of U.S. Ser. No. 171, 539, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5600000	A	19970204	US 1995-461549	19950605
EP 737669	A1	19961016	EP 1995-302456	19950412
EP 737669	B1	19990922		
R: BE, DE, GB, NL, SE				
US 5891820	A	19990406	US 1995-465186	19950605
PRIORITY APPLN. INFO.:			US 1993-171539	B1 19931222
			EP 1995-302456	A 19950412

L23 ANSWER 49 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Simulants for the Hanford Waste Vitrification Plant feed, containing the  
 major non-radioactive components Al, Cd, Fe, Mn, Nd, Ni, Si, Zr, Na, CO<sub>3</sub>2-, NO<sub>3</sub>-, and NO<sub>2</sub>-, were used to study reactions of HCOOH at 90° catalyzed by the noble metals Ru, Rh, and/or Pd found in significant quantities in U fission products. Such reactions were monitored by using gas chromatog. to analyze the CO<sub>2</sub>, H<sub>2</sub>, NO, and N<sub>2</sub>O in the gas phase and a microammonia electrode to analyze the NH<sub>4</sub><sup>+</sup>/NH<sub>3</sub> in the liquid phase as a function of time. Decomposition of HCOOH to CO<sub>2</sub> + H<sub>2</sub> is undesirable because of the potential fire and explosion hazard of H<sub>2</sub>. Rh, which was introduced as soluble RhCl<sub>3</sub>·3H<sub>2</sub>O, was the most active catalyst for H<sub>2</sub> generation from HCOOH above approx. 80° in the presence of NO<sub>2</sub>- ion. The H<sub>2</sub> production rate has an approx. pseudo first-order dependence on the Rh concentration. Generation of NH<sub>3</sub> from the HCOOH reduction of NO<sub>3</sub>- and/or NO<sub>2</sub>- is undesirable because of a possible explosion hazard from NH<sub>4</sub>NO<sub>3</sub> accumulation in a waste processing plant offgas system. The Rh-catalyzed reduction of N-O compds. to NH<sub>3</sub> by HCOOH exhibited the following features: (1) NO<sub>3</sub>- rather than NO<sub>2</sub>- is the principal source of NH<sub>3</sub>; (2) NH<sub>3</sub> production occurs at the expense of H<sub>2</sub> prodn; (3) supported Rh metal catalysts are more active than Rh in any other form, suggesting that NH<sub>3</sub> production involves heterogeneous rather than homogeneous catalysis.

ACCESSION NUMBER: 1996:348170 CAPLUS  
 DOCUMENT NUMBER: 125:43555  
 TITLE: Noble metal-catalyzed homogeneous and heterogeneous processes in treating simulated nuclear waste media with formic acid  
 AUTHOR(S): King, R. B.; Bhattacharyya, N. K.; Smith, H. D.; Wiemers, K. D.  
 CORPORATE SOURCE: Department of Chemistry, University of Georgia, Athens, GA, 30602, USA  
 SOURCE: Journal of Molecular Catalysis A: Chemical (1996), 107(1-3), 145-152  
 CODEN: JMCCF2; ISSN: 1381-1169  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L23 ANSWER 51 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The catalysts have general formula AlP<sub>1</sub>-nO<sub>2</sub>nHc {0 ≤ n < 1; 0 < b ≤ [3+5(1-n)+c]/3; 0 ≤ a < [3+5(1-n)+c]/2; 10-3 ≤ c ≤ 10-1 for the total mass of the aluminophosphate}. The catalysts are manufactured by nitriding an aluminophosphate having general formula AlP<sub>1</sub>-nO<sub>2</sub>[3+5(1-n)+c]/2Hc (n, c as above). The catalysts are especially suitable for use in condensation reactions, e.g., the manufacture of citrionitrile and Me and Et cinnamate, for aldol condensations and dehydrogenation and hydrogenation reactions, e.g., the manufacture of MIBK, and for the dehydrogenation of alkanes and alkenes.

ACCESSION NUMBER: 1995:958039 CAPLUS  
 DOCUMENT NUMBER: 123:344871  
 TITLE: Aluminophosphate-based catalysts, and their manufacture and use in condensation, and dehydrogenation and hydrogenation reactions  
 INVENTOR(S): Marchand, Roger; Conanec, Roland; Laurent, Yves; Bastians, Philippe; Grange, Paul; Gandia-Pascual, Luis  
 PATENT ASSIGNEE(S): M.; Montes-Ramirez, Mario; Fernandez-Sanz, Javier; Odriozola-Gordon, Jose Antonio; Razafindrakoto, John  
 SOURCE: Universite de Rennes I, Fr.; Universite Catholique de Louvain; Universidad del Pais Vasco; Universidad de Sevilla; Cernix  
 DOCUMENT TYPE: PCT Int. Appl., 26 pp.  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: French  
 PATENT INFORMATION: 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9521123	A1	19950810	WO 1995-FR107	19950131
W: CA, JP, US				
RW: AT, BE, CH, FR 2715584	A1	19950804	FR 1994-1081	19940201
FR 2715584	B1	19960419		
PRIORITY APPLN. INFO.:			FR 1994-1081	19940201

L23 ANSWER 50 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Hydroxylamines are produced from NH<sub>3</sub> or corresponding amines, H<sub>2</sub>, and O<sub>2</sub> by using an oxidation catalyst based on a Ti silicate or V silicate with a zeolite structure and containing 0.01-20 weights % Pt group metal including Ru, Rh, Pd, Os, Ir, and Pt. The Pt group metals are present in 22 different binding energy states. The oxidation catalyst can also contain Fe, Co, Ni, Re, Ag, and/or Au. The (Ti and/or V)/(Si + (Ti and/or V)) mol ratio is (0.01-0.1).  
 : 1. The oxidation catalyst is prepared by impregnation of zeolitic Ti silicates or V silicates with Pt group metal salts, chelate complexes, or carbonyl complexes and subsequent adjustment of the required distribution of the binding energy states of the Pt group metals under suitable reducing or oxidizing conditions.

ACCESSION NUMBER: 1996:307426 CAPLUS  
 DOCUMENT NUMBER: 124:320125  
 TITLE: Manufacture of hydroxylamines from ammonia or corresponding amines, hydrogen, and oxygen  
 INVENTOR(S): Mueller, Ulrich; Heineke, Daniel  
 PATENT ASSIGNEE(S): BASF A.-G., Germany  
 SOURCE: Ger. Offen., 5 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4435239	A1	19960411	DE 1994-4435239	19941004
WO 9610535	A1	19960411	WO 1995-EP3771	19950923
W: AU, CA, CN, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9536989	A1	19960426	AU 1995-36989	19950923
EP 784593	A1	19970723	EP 1995-934637	19950923
EP 784593	B1	19990616		
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
JP 10506366	T2	19980623	JP 1995-511358	19950923
AT 181309	E	19990715	AT 1995-934637	19950923
ES 2133810	T3	19990916	ES 1995-934637	19950923
US 5777163	A	19980707	US 1997-809709	19970404
PRIORITY APPLN. INFO.:			DE 1994-4435239	19941004
			WO 1995-EP3771	19950923

L23 ANSWER 52 OF 68 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Amines [MeC(R1R2)C(R3R4)](2+x)NH(1-x) (R1, R2 = H, Me; R3, R4 = H, Me, Et; x = 0, 1) (e.g., Pr<sub>2</sub>NH) are dehydrocyclized in the optional presence of and/or NH<sub>3</sub> and with a non-acidic mol. sieve/zeolite catalyst [containing ≥95% of the H cations exchanged with an alkali metal, an alk. earth metal, Zn, Group VIII zerovalent metals (e.g., Pt), etc.] to azacycloheptanes in good selectivity. The mol. sieves show <5% activity in a standard heptene-1 isomerization test.

ACCESSION NUMBER: 1995:793025 CAPLUS  
 DOCUMENT NUMBER: 123:256548  
 TITLE: Dehydrocyclization process and catalysts for preparing azacycloheptanes from amines  
 INVENTOR(S): Galperin, Leonid B.; Bricker, Jeffrey C.  
 PATENT ASSIGNEE(S): UOP Inc., USA  
 SOURCE: U.S., 4 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5440034	A	19950808	US 1993-174093	19931228
PRIORITY APPLN. INFO.:			US 1993-174093	19931228
OTHER SOURCE(S):			CASREACT 123:256548; MARPAT 123:256548	

L23 ANSWER 53 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process for converting noxious nitrogen oxides present in gaseous effluent to N<sub>2</sub> comprising reacting the gaseous effluent with an effective amount of reducing agent, e.g., ammonia, in the presence of a catalyst structure comprising a film of interconnected zeolite crystals bonded to a substrate, said catalyst structure being characterized by a value r representing the mg of zeolite/cm<sup>2</sup> of substrate surface and a value e representing the coating efficiency as mg of bonded zeolites/mg of YO<sub>2</sub> initially in the synthesis mixture, wherein r is at least 0.5 and e is at least 0.05.  
 ACCESSION NUMBER: 1995:386342 CAPLUS  
 DOCUMENT NUMBER: 122:141304  
 TITLE: Nitrogen oxides removal from waste gases using zeolite reduction catalyst  
 INVENTOR(S): Grasselli, Robert K.; Lago, Rudolph M.; Socha, Richard  
 PATENT ASSIGNEE(S): F.; Tsikoyiannis, John G.  
 SOURCE: U.S., 10 pp. Cont.-in-part of U.S. Ser. No. 910,861.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5374410	A	19941220	US 1993-148943	19931108
US 5310714	A	19940510	US 1992-910861	19920708
US 5316661	A	19940531	US 1993-47137	19930416
PRIORITY APPLN. INFO.:			US 1992-910861	A2 19920708
			US 1993-47137	A2 19930416

L23 ANSWER 54 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Hydroamination of PhOH and cyclohexanone was studied in liquid phase in presence of Pd, Pt, Rh, Os, Ru, Ir, Ni, Cu, or Fe catalysts deposited on various types of carbon black, Al<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, Zr(OH)<sub>2</sub>, Cr<sub>2</sub>O<sub>3</sub>, or Al silicate at 130° and atmospheric pressure. Mechanism and selectivity of the reactions were discussed.  
 ACCESSION NUMBER: 1992:636234 CAPLUS  
 DOCUMENT NUMBER: 117:236234  
 TITLE: Liquid-phase hydroamination of phenol and cyclohexanone  
 AUTHOR(S): Murzin, D. Yu.; Kul'kova, N. V.  
 CORPORATE SOURCE: Nauchno-Issled. Fiz.-Khim. Inst. im. Karpova, Moscow, Russia  
 SOURCE: Kinetika i Kataliz (1992), 33(3), 549-55  
 CODEN: KINKTA4; ISSN: 0453-8811  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L23 ANSWER 55 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB H-containing combustible gases and O<sub>2</sub> are contacted with catalysts (e.g., metal oxides) in a magnetic field for reaction under controlled rates.  
 ACCESSION NUMBER: 1992:197009 CAPLUS  
 DOCUMENT NUMBER: 116:197009  
 TITLE: Control of catalytic combustion rates  
 INVENTOR(S): Onishi, Hisao; Sasaki, Hiroichi; Itsuonmatsu, Masamichi  
 PATENT ASSIGNEE(S): Osaka Gas Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03284344	A2	19911216	JP 1990-86662	19900330
JP 3141239	B2	20010305		
PRIORITY APPLN. INFO.:			JP 1990-86662	19900330

L23 ANSWER 56 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Ni/y-Al<sub>2</sub>O<sub>3</sub> was almost as effective as Ni-Ti-Pd in catalyzing the title synthesis, and was more active than Ni-Zr-Cu. Increasing the reaction temperature and the catalyst loading with O(CH<sub>2</sub>CH<sub>2</sub>OH)<sub>2</sub> (I) increased the I conversion and decreased the selectivity for morpholine (II). The maximum II yield was 52-58%, obtained at 210° and ≤200 g/L-h I.  
 ACCESSION NUMBER: 1991:536025 CAPLUS  
 DOCUMENT NUMBER: 115:136025  
 TITLE: Study of catalysts for the vapor-phase synthesis of morpholine from diethylene glycol, ammonia, and hydrogen  
 AUTHOR(S): Dvoncova, E.; Kouzelka, L.; Peterka, M.  
 CORPORATE SOURCE: Vysk. Ustav Petrochem., Prievidza, Czech.  
 SOURCE: Petrochemia (1990), 30(1-2), 56-62  
 CODEN: PTCMB7; ISSN: 0370-2154  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Slovak  
 OTHER SOURCE(S): CASREACT 115:136025

L23 ANSWER 57 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB HCO<sub>2</sub>H and MeOH from CO<sub>2</sub> and H<sub>2</sub>O<sub>2</sub> from O). Insertion reactions (e.g., production of NH<sub>3</sub> and N<sub>2</sub>H<sub>4</sub> from N) are carried out at using bipolar mobile-atom transmissive membranes comprising mobile atom pumps, conductive atom-transmissive media on 1 surface, and conductive atom transmissive media on the opposite surface, across which the mobile atom diffuses as to the reaction side of the membrane. The insertion-reaction side of the membrane is pos. biased with respect to a counterelectrode,

so that reactant mols. are electrosorbed on that surface. The electrosorbed mol. reacts with the surface atoms (e.g. H) by inertion to form reduced products. A reactor diagram is presented.

ACCESSION NUMBER: 1990:237204 CAPLUS  
 DOCUMENT NUMBER: 112:237204  
 TITLE: Membranes for reactors for mobile-atom insertion reactions  
 INVENTOR(S): Ayers, William  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S., 17 pp. Division of U.S. Ser. No. 780,870, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4908114	A	19900313	US 1987-117298	19871106
US 5141604	A	19920825	US 1989-447596	19891208
PRIORITY APPLN. INFO.:			US 1985-780870	19850927
			US 1984-618014	19840607
			US 1987-117298	19871106

OTHER SOURCE(S): CASREACT 112:237204

L23 ANSWER 58 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title process comprises conducting in a H-production zone a chemical reaction forming mixed gases comprising H, contacting one side of a H ion-permeable and mol. gas-imperious metallic foil with mixed gases in the H-production zone, dissociating the mol. H into ionic H, passing the ionic H through the metal foil to its other side, and withdrawing H from the other side to remove the H from the production zone. This method is especially useful for the production of H from S-contaminated, naturally occurring fuels, without the need for chemical purification systems, and enhances the conversion of CH<sub>4</sub> in steam-reforming processes at lower temps., and H production at higher temps.

by water gas shift reactions. A gas mixture from a single-stage fluidized bed gasifier operated at 1875° and 500 psia with a bed of coal and limestone for S removal, having composition H 27.0, CH<sub>4</sub> 7.4, CO 33.4, CO<sub>2</sub> 14.7, H<sub>2</sub>O 16.8, N 0.4, H<sub>2</sub>S 0.2, and NH<sub>3</sub> 0.1%, was cooled to approx.1200°F and passed through a water gas shift reactor containing a Co-Mo catalyst and multiple 0.0005-in.-thick Ni foil tubes having an inner inert, porous ceramic support, to withdraw H from the system. The water gas shift reactor may be followed by a stream reforming reactor to convert residual CH<sub>4</sub> into H.

ACCESSION NUMBER: 1989:409728 CAPLUS  
 DOCUMENT NUMBER: 111:9728  
 TITLE: Hydrogen-forming reaction process  
 INVENTOR(S): Marianowski, Leonard G.; Fleming, Donald K.  
 PATENT ASSIGNEE(S): Institute of Gas Technology, USA  
 SOURCE: U.S., 7 pp. Cont.-in-part of U.S. 4,702,973.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4810485	A	19890307	US 1987-113175	19871023
US 4702973	A	19871027	US 1986-899878	19860825
PRIORITY APPLN. INFO.:			US 1986-899878	19860825

L23 ANSWER 59 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A 2-reaction-zone process for reducing NO<sub>x</sub> in combustion effluents comprises introducing a reducing agent (e.g., urea or cyanuric acid) containing NH or CN groups into an O-deficient gaseous decomposition zone at 150-1650° and then mixing the resulting gas with the combustion effluents in an O-rich reaction zone at 260-1425° for NO<sub>x</sub> reduction. The method can be combined with injection of a SO<sub>x</sub> removal agent (limestone, quicklime, hydrated lime) for SO<sub>x</sub> capture. Thus, urea was injected into an O-deficient decomposition zone at 1020° and then mixed with combustion effluents at 850° in a reaction zone for reduction of NO<sub>x</sub> from 240 to 40 ppm.

ACCESSION NUMBER: 1989:28543 CAPLUS  
 DOCUMENT NUMBER: 110:28543  
 TITLE: Methods of removing nitrogen oxide and sulfur oxide emissions from combustion systems using nitrogenous compounds  
 INVENTOR(S): Heap, Michael P.; McCarthy, James M.; Chen, Shih L.; Pershing, David W.  
 PATENT ASSIGNEE(S): Energy and Environmental Research Corp., USA  
 SOURCE: Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 287224	A2	19881019	EP 1988-302535	19880323
EP 287224	A3	19901212		
EP 287224	B1	19951129		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 4861567	A	19890829	US 1987-39324	19870416
US 4851201	A	19890725	US 1987-73980	19870715
AT 130780	E	19951215	AT 1988-302535	19880323
PRIORITY APPLN. INFO.:			US 1987-39324	19870416
			US 1987-73980	19870715

L23 ANSWER 60 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A catalytically active vitrified metal is described from Zl element of Group IVB, especially Zr or Ti, and Zl element of Group IB, especially Cu, or VB, especially V, or VIII, especially Co, Ni, Pd, and Fe, self-activated or activated through an oxidative and/or reductive treatment for use as catalyst, especially for hydrogenation, oxidation, or isomerization. Examples illustrate the use of these catalysts in the synthesis of NH<sub>3</sub>, hydrogenation of ethylene, oxidation of toluene, hydrogenation of 1,3-butadiene, and selective hydrogenation of butadiene. Typical glassy metals are Fe<sub>91</sub>Zr<sub>9</sub>, Fe<sub>91</sub>Ti<sub>9</sub>, (Fe<sub>9</sub>Zr<sub>9</sub>)<sub>95</sub>Mo<sub>5</sub>, (Fe<sub>91</sub>Ti<sub>9</sub>)<sub>95</sub>Mo<sub>5</sub>, Fe<sub>24</sub>Zr<sub>76</sub>, Ni<sub>24</sub>Zr<sub>76</sub>, Ni<sub>64</sub>Zr<sub>36</sub>, Ni<sub>24</sub>Ti<sub>76</sub>, Ni<sub>64</sub>Ti<sub>36</sub>, Cu<sub>70</sub>Zr<sub>30</sub>, Cu<sub>70</sub>Ti<sub>30</sub>, V<sub>36</sub>Zr<sub>64</sub>, and V<sub>36</sub>Ti<sub>64</sub>.

ACCESSION NUMBER: 1986:503445 CAPLUS  
 DOCUMENT NUMBER: 105:103445  
 TITLE: Catalytically active vitrified metals  
 INVENTOR(S): Franzen, Volker; Guentherodt, Hans Joachim; Baiker, Alphons; Armbruster, Erich; Baris, Halim  
 PATENT ASSIGNEE(S): Lonza A.-G., Switz.  
 SOURCE: Eur. Pat. Appl., 17 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 173088	A2	19860305	EP 1985-109442	19850726
EP 173088	A3	19880107		
EP 173088	B1	19920429		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
CH 660130	A	19870331	CH 1984-3679	19840727
JP 61035852	A2	19860220	JP 1985-162794	19850723
DD 239347	A5	19860924	DD 1985-278876	19850723
CA 1262718	A1	19891107	CA 1985-487421	19850724
US 4735789	A	19880405	US 1985-758829	19850725
NO 8502979	A	19860128	NO 1985-2979	19850726
DK 8503410	A	19860128	DK 1985-3410	19850726
SU 1402246	A3	19880607	SU 1985-3932555	19850726
AT 75420	E	19920515	AT 1985-109442	19850726
US 4727202	A	19880223	US 1987-51183	19870518
US 4938296	A	19900703	US 1989-338401	19890414
CA 1292977	A2	19911210	CA 1989-601832	19890605
PRIORITY APPLN. INFO.:			CH 1984-3679	19840727
			CA 1985-487421	19850724
			US 1985-758829	19850725
			EP 1985-109442	19850726
			US 1986-833237	19860227
			US 1986-833239	19860227
			US 1987-51183	19870518
			US 1987-80198	19870731

AB The insertion reactions are carried out at a bipolar mobile atom transmissive membrane formed of a H pump material consisting of Pd, Ti, and their alloys and hydrides, and conductive atom means on both sides of the membrane. The mobile atom, such as H, diffuses across the membrane to provide a source of H on the insertion side of the membrane, which is pos. biased with respect to a counter electrode so that a reactant mol. such as CO<sub>2</sub> is electrosorbed on the surface of the membrane.

The electrosorbed reactant mol. chemical reacts with the surface H by the insertion reaction to form a reduced, hydrogenated product such as formic acid.

ACCESSION NUMBER: 1986:58456 CAPLUS  
DOCUMENT NUMBER: 104:58456  
TITLE: Hydrogen insertion reaction for synthesis of reduced, hydrogenated compounds  
INVENTOR(S): Ayers, William  
PATENT ASSIGNEE(S): Energy Conversion Devices, Inc., USA  
SOURCE: U.S., 17 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4547273	A	19851015	US 1984-618014	19840607
EP 164035	A2	19851211	EP 1985-106402	19850524
EP 164035	A3	19861203		
EP 164035	B1	19900801		
R: DE, FR, GB, NL				
CA 1325876	A1	19940111	CA 1985-483252	19850605
JP 61003890	A2	19860109	JP 1985-123459	19850606
JP 63060115	B4	19881122		
US 5141604	A	19920825	US 1989-447596	19891208
PRIORITY APPLN. INFO.:			US 1984-618014	19840607
			US 1985-780870	19850927
			US 1987-117298	19871106

AB The role of the collectivized systems of s and d electrons of a ferromagnetic in the process of adsorption (H and N) and catalysis (NH<sub>3</sub> decomposition) was studied exptl. on Ni- 3 weight% Cu and Ni- 6 weight% Cu films and on layered Pd-Ni films and by using the s-d volume interaction theory of S. V. Vonsovskii in the exptl.-data anal. The spontaneous magnetization of the films affects the ratio of charged forms of chemisorbed H and N and decreases the electron-work function in the ferromagnetic state. The magnetic state of films changes during the chemisorption owing to the change of parameters of the s-d volume interaction and owing to the energy

change of the surface magnetic anisotropy, the kinetic parameters of the NH<sub>3</sub> decomposition change due to either the spontaneous magnetization or

to a change of limiting stage or to a change of surface active-center concentration

ACCESSION NUMBER: 1980:11738 CAPLUS  
DOCUMENT NUMBER: 92:11738  
TITLE: Effect of magnetization on chemisorption and catalytic

properties of nickel and nickel

alloy films  
AUTHOR(S): Yagodovskii, V. D.; Denisov, G. N.; Mikhaleiko, I. I.;

Temko, S. V.  
CORPORATE SOURCE: Univ. Druzh. Nar. im. Lumumby, Moscow, USSR  
SOURCE: Tezisy Dokl. Vses. Simp. Akt. Poverkh. Tverd. Tel, 2nd (1977), 20. Tartuskii Univ.: Tartu, USSR.

CODEN: 41VEAB

DOCUMENT TYPE: Conference  
LANGUAGE: Russian

AB The reaction of NO with H over metal oxide catalysts supported on diatomaceous earth was investigated by using a conventional flow microreactor under atmospheric pressure. Reaction temperature was varied from 100 to 500°. At low temps. the formation of N was observed and at high temps., the formation of NH<sub>3</sub>. NO was nearly reduced to NH<sub>3</sub> or N at low temps. over the catalysts such as Fe, Pd, Cu, and Ni, but was not easily reduced to NH<sub>3</sub> or N over Mn, Cr, and Fe catalysts. The formation of NH<sub>3</sub> over the catalysts except Fe catalyst was observed in proportion to temperature increase. But only N was observed over Fe catalyst even at high temps., for example 500°.

ACCESSION NUMBER: 1979:28396 CAPLUS  
DOCUMENT NUMBER: 90:28396  
TITLE: Catalytic reduction of nitric oxide. (Part 1)  
AUTHOR(S): Fukagawa, Masayuki; Igawa, Shigeyoshi  
CORPORATE SOURCE: Ube Tech Coll., Ube, Japan  
SOURCE: Ube Kogyo Koto Senmon Gakko Kenkyu Hokoku (1977), 23, 63-8  
CODEN: UKKHDQ; ISSN: 0386-4359  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese

L23 ANSWER 64 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The formation of HNCO and NH4OCN was studied over unsupported Pd, Ir, and Pt-10% Rh catalysts. The reactions studied are  $2\text{NO} + 3\text{CO} + 2\text{H}_2 \rightarrow \text{NH}_4\text{OCN} + 2\text{CO}_2$ ,  $2\text{NO} + 4\text{CO} + \text{H}_2 \rightarrow 2\text{HNCO} + 2\text{CO}_2$ , and  $2\text{NO} + 2\text{NH}_3 + 4\text{CO} + \text{H}_2 \rightarrow 2\text{NH}_4\text{OCN} + 2\text{CO}_2$ . The yields of NH4OCN in the 1st reaction were 97% for the Pt-10% Rh catalyst. The best yield of HNCO in the 2nd reaction was 75% over the Ir catalyst, with an addnl. 22% of the NO reacting according to the 1st reaction, for an overall NO  $\rightarrow$  NCO conversion of 86%. The 3rd reaction was carried out with a yield of 86% over Pt-10% Rh. These reactions may be attractive synthetic routes to NH4OCN, or its isomer urea, and to HNCO or its trimer isocyanuric acid. The effects of H2O and H2 in the inlet gas of the reaction depend on the temperature and on the H2O/H2 ratio. The results are explained by a reaction scheme which places central importance on the adsorbed NCO intermediates. Hydrogenation and hydrolysis of NCO lead to HNCO and NH3. The mechanistic reaction scheme presented accounts for the observed product distributions for Pt, Rh, Ru, Os, and Cu-Ni in addition to Pd, Ir, and Pt-10% Rh.

ACCESSION NUMBER: 1978:553339 CAPLUS  
 DOCUMENT NUMBER: 89:153339  
 TITLE: Conversion of nitric oxide to isocyanic acid and ammonium cyanate over palladium, iridium, and platinum-10% rhodium catalysts  
 AUTHOR(S): Voorhoeve, R. J. H.; Trimble, L. E.  
 CORPORATE SOURCE: Bell Lab., Murray Hill, NJ, USA  
 SOURCE: Journal of Catalysis (1978), 54(2), 269-80  
 CODEN: JCTLA5; ISSN: 0021-9517  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L23 ANSWER 66 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The effect of the presence of metallic films on the decomposition of NH3 and N2H4 synthesis in a glow discharge was studied. The Pd and Au films did not affect the rate of the former reaction, whereas the Ag, Pt, and Ni films slightly increased the extent of decomposition at higher discharge powers. The yield of the N2H4 synthesis was increased in the presence of metallic films; by assuming the stationary yield on quartz in the absence of metals as 1, it was 2.6 times higher in the presence of Pd and Ni, 2.8-3.3 times higher for Au and Ag films, and 5.2 for Pt. The addition of H2 and N2 to the reaction mixture inhibited both reactions. A mechanism of the reactions was proposed involving in the case of the NH3 decomposition the excitation of the NH3 mol. at collision with an electron. The N2H4 synthesis comprises the reactions with the participation of NH radicals and NH3 mols. The presence of atomic H inhibits both reactions. The role of the metallic films consists in facilitating the atomic H recombination and thus increases the reaction rates.

ACCESSION NUMBER: 1968:430571 CAPLUS  
 DOCUMENT NUMBER: 69:30571  
 TITLE: Heterogeneous catalytic effects during ammonia reactions in electrical discharges. I. Glow discharge  
 AUTHOR(S): Rubtsova, E. A.; Eremin, E. N.  
 CORPORATE SOURCE: Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR  
 SOURCE: Zhurnal Fizicheskoi Khimii (1968), 42(4), 1022-6  
 CODEN: ZFKH93; ISSN: 0044-4537  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L23 ANSWER 65 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Reduction of NO with H over various metal oxide catalysts supported on  $\gamma$ -alumina was investigated using a conventional flow microreactor at 420° and under atmospheric pressure. Formation of N, N2O and/or NH3 was observed during the reduction, and the catalysts were classified into 2 groups according to the selectivity, i.e., (1) Pt, Pd, Cu, and Ni, showed high selectivity for NH3 formation (2) another was effective for N or N2O formation, and this group was further subdivided into (2A) and (2B): (2A) Fe, Cr, selective for N formation, (2B) Co, Mn, etc., selective for N2O formation. Moreover, N2O was an intermediate compound for N formation from NO over the catalysts of group 2. The reduction of NO over Fe catalyst was kinetically investigated. The reaction proceeded through redox pathway on the catalyst.

ACCESSION NUMBER: 1974:124209 CAPLUS  
 DOCUMENT NUMBER: 80:124209  
 TITLE: Reduction of nitric oxide with hydrogen over various metal oxide catalysts  
 AUTHOR(S): Echigoya, Etsuro; Nhyama, Hiroo; Ebitani, Atsushi  
 CORPORATE SOURCE: Dep. Chem. Eng., Tokyo Inst. Technol., Tokyo, Japan  
 SOURCE: Nippon Kagaku Kaishi (1974), (2), 222-6  
 CODEN: NKAKBB; ISSN: 0369-4577  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L23 ANSWER 67 OF 68 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB cf. C.A. 49, 13059d. The authors studied changes of structure and catalytic activity of ZnO on heating, the recrystn. of thin layers of Ag and Au (C.A. 44, 915d) investigated by use of electron microscopy, and the changes of structure of the surface of massive Pt and Pd during oxidation of H2 on them (C.A. 48, 13382a). By means of electron micrographs, distribution functions of particles in a heated Ag layer are given, giving evidence of a considerable recrystn. of Ag at 230°. The recrystn. of oxides (CuO, NiO, PbO) proceeds at higher temps. (500-600°) and depends greatly on the nature of the carrier (on ZnO and asbestos, cubic crystals 0.3-0.5  $\mu$  in size develop in the CuO layers, but on films of SiO2, asym. crystals with a maximum diameter of 1.5-2  $\mu$ ). For the first time, electron micrographs were obtained showing the consecutive stages of recrystn. of particles in a Ag layer, deposited on ZnO. The changes of the surface of Pt ("catalytic corrosion") occurring during the oxidation of NH3 and the decrease of this corrosion by addition of Rh to the Pt are shown by the electron microscopic method, as is the occurrence of catalytic corrosion of Cu during the endothermic decomposition reaction of NH3. The variations in the changes of various crystallographic faces of a Cu monocrystal during the oxidation of H2 are shown.

ACCESSION NUMBER: 1958:79302 CAPLUS  
 DOCUMENT NUMBER: 53:79302  
 ORIGINAL REFERENCE NO.: 53:14383f-i  
 TITLE: The role of surface mobility of atoms in the processes of preparation and aging of catalysts  
 AUTHOR(S): Shekhter, A. B.; Tret'yakov, I. I.  
 SOURCE: Geterogennyy Kataliz v Khim. Prom. (Moscow: Nauch.-Tekh. Izdatel. Khim. Lit.) Sbornik (1955) 349-74  
 DOCUMENT TYPE: From: Referat. Zhur., Khim. 1956, Abstr. No. 53965  
 LANGUAGE: Journal  
 Unavailable

L23 ANSWER 68 OF 68 CAPIUS COPYRIGHT 2004 ACS on STN  
 AB The yield of HCN by the catalytic reaction between NH3 and CO can be made much higher if excess CO in the reaction product is freed from H2 and used repeatedly, for much more CO must be used than NH3 because the equilibrium  $\text{NH}_3 + 2\text{CO} = \text{HCN} + \text{H}_2 + \text{CO}_2$  is shifted to the left (ibid. Number 7, 1(1951); C.A. 47, 11915b). CO admixed with 5% H2 and 5% O2 was passed over the catalysts Pd, Pt, Cu, Ni, Fe, CuO, active charcoal, graphite,  $2\text{ZnO} \cdot \text{Cr}_2\text{O}_3$  (for MeOH synthesis),  $\text{Cr}_2\text{O}_3$ ,  $\text{Fe}_2\text{O}_3$ , stainless steel, Al, and  $\text{CuCl}_2$ . The catalytic activity for the selective oxidation of H2 was measured by analyzing the gas between room temperature and 500°. Catalysts are classified into 4 groups according as, when the temperature of reaction rises, (1) the oxidation rate (I) of CO increases monotonously whereas I of H2 increases until it reaches a maximum and decreases thereafter, (2) I of both gases remains nearly constant up to 250°. (3) I of both gases monotonously increases, or (4) I of CO increases monotonously and I of H2 is zero within the accuracy of the measurements. Typical examples are Pd, Pt, CuO, and  $2\text{ZnO} \cdot \text{Cr}_2\text{O}_3$ , for these 4 groups, resp. The effects of H2O and HCl were examined H2O exerts little effect on I, whereas HCl, for types (1) and (2), hinders I of CO over all temperature ranges and of H2 at low temperature and accelerates I of H2 at high temperature. Thus by addition of HCl in the reaction system by 0.5-0.7%, H2 can be oxidized almost completely between 200 and 400°, less than 1% of CO being oxidized, by use of Pd or Pt as the catalyst. This effect may be interpreted on the basis of formation of a negatively charged Cl layer on the Pd catalyst. It is supposed that no such layer is formed on  $\text{Fe}_3\text{O}_4$  whose activity is independent of the addition of HCl.

ACCESSION NUMBER: 1954:2611 CAPIUS  
 DOCUMENT NUMBER: 48:2611  
 ORIGINAL REFERENCE NO.: 48:433f-i,434a  
 TITLE: Selective oxidation of hydrogen contained in carbon monoxide  
 AUTHOR(S): Horiuchi, Juro; Watanabe, Yoshihiro  
 SOURCE: Shokubai (1953), No. 9, 36-43  
 CODEN: SHKUAJ; ISSN: 0559-8958  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

=> s Pd/Ni or Ni/Pd  
 DATE SPECIFICATION IS NOT VALID  
 Date specifications may use ranges and numeric operators. The date  
 itself can be in any of the following general formats:

STN Format: YYYMMDD

Slash Format: MM/DD/YYYY or MM/YYYY

Dot Format: DD.MM.YYYY or MM.YYYY

Text Format:	February 10, 1987	Feb 1989
	Feb. 10, 1987	1990
	Feb. 10, 2000	1998 - 2001
	Feb 10, 1987	July 1997 - May 2002
	10 February 1987	March 5 - 8, 1990
	10 Feb 2007	April - June, 1999

Any year entered with only two digits will be interpreted as being  
 in the range 1900-1999. Thus, Mar 12 01 will be searched as  
 19010312.

=> s Pd/Ni  
 'NI' IS NOT A VALID FIELD CODE  
 L24 0 PD/NI

=> s "Pd/Ni"  
 170312 "PD"  
 2008 "PDS"  
 171968 "PD"  
 ("PD" OR "PDS")  
 572330 "NI"  
 3623 "NIS"  
 574498 "NI"  
 ("NI" OR "NIS")  
 L25 2088 "PD/NI"  
 ("PD" (W) "NI")

=> s "Ni/Pd"  
 572330 "NI"  
 3623 "NIS"  
 574498 "NI"  
 ("NI" OR "NIS")  
 170312 "PD"  
 2008 "PDS"  
 171968 "PD"  
 ("PD" OR "PDS")  
 L26 4260 "NI/PD"  
 ("NI" (W) "PD")

=> s l25 or l26  
 L27 6108 L25 OR L26

=> s "palladium/nickel"  
 141996 "PALLADIUM"  
 35 "PALLADIUMS"  
 141999 "PALLADIUM"  
 ("PALLADIUM" OR "PALLADIUMS")  
 556503 "NICKEL"



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      189 "NICKELS"
      556530 "NICKEL"
      ("NICKEL" OR "NICKELS")
L28      1598 "PALLADIUM/NICKEL"
      ("PALLADIUM" (W) "NICKEL")

=> s "nickel/palladium"
      556503 "NICKEL"
      189 "NICKELS"
      556530 "NICKEL"
      ("NICKEL" OR "NICKELS")
      141996 "PALLADIUM"
      35 "PALLADIUMS"
      141999 "PALLADIUM"
      ("PALLADIUM" OR "PALLADIUMS")
L29      3063 "NICKEL/PALLADIUM"
      ("NICKEL" (W) "PALLADIUM")

=> s l28 or l29
L30      4180 L28 OR L29

=> s l30 or l27
L31      8660 L30 OR L27

=> s catalyst
      663997 CATALYST
      668567 CATALYSTS
L32      851071 CATALYST
      (CATALYST OR CATALYSTS)

=> s l31 and l32
L33      1852 L31 AND L32

=> d his

      (FILE 'HOME' ENTERED AT 17:32:43 ON 22 AUG 2004)

      FILE 'REGISTRY' ENTERED AT 17:33:06 ON 22 AUG 2004
L1      1 S HYDROGEN/CN
L2      5578 S AMMONIA
L3      1 S AMMONIA/CN

      FILE 'CAPLUS' ENTERED AT 17:34:15 ON 22 AUG 2004
L4      223685 S PD OR PALLADIUM
L5      773496 S NI OR NICKEL
L6      851071 S CATALYST
L7      12622 S L4 AND L5 AND L6
L8      710036 S ZN OR ZINC
L9      351819 S CD OR CADMIUM
L10     1088140 S CU OR COPPER
L11     411318 S AG OR SILVER
L12     2003 S L7 AND L8
L13     570 S L7 AND L9
L14     4232 S L7 AND L10
L15     2199 S L7 AND L11
L16     129743 S 7664-41-7/RN
L17     286018 S 1333-74-0/RN
L18     9006 S L16 AND L17
L19     28 S L18 AND L12

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L20            5 S L18 AND L13  
 L21           55 S L18 AND L14  
 L22           25 S L18 AND L15  
 L23           68 S L19 OR L20 OR L21 OR L22  
 L24           0 S PD/Ni  
 L25           2088 S "PD/Ni"  
 L26           4260 S "Ni/PD"  
 L27           6108 S L25 OR L26  
 L28           1598 S "PALLADIUM/NICKEL"  
 L29           3063 S "NICKEL/PALLADIUM"  
 L30           4180 S L28 OR L29  
 L31           8660 S L30 OR L27  
 L32           851071 S CATALYST  
 L33           1852 S L31 AND L32

=> s l33 and l8

L34           177 L33 AND L8

=> s l33 and l9

L35           54 L33 AND L9

=> s l33 and l10

L36           390 L33 AND L10

=> s l33 and l11

L37           197 L33 AND L11

=> s l34 or l35 or l36 or l37

L38           514 L34 OR L35 OR L36 OR L37

=> d l38 1-514 abs ibib

L38 ANSWER 1 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A cracking **catalyst** for combined cracking of hydrocarbon feedstocks with selective combustion of hydrogen and reduced NOx emissions consists of 21 solid acid component and 21 metal-based oxygen- and sulfur-containing component. The metal oxide and sulfide component is itself selected from: (1) a Group 3 metal and a metal from Groups 4-15, (2) a metal from Groups 5-15 and at least one metal from Groups 1, 2, and 4, (3) a Group 1 or Group 2 metal, a Group 3 metal, and a metal from Groups 4-15, and (4) two or more metals from Groups 4-15. Suitable Group 3 metals include Sc, Y, La, Ce, Sm, Y, and Pr; suitable metals from Groups 4-15 include Ti, Zr, Nb, Mo, W, Mn, Fe, Co, Ir, Ni, Pd, Pt, Cu, Zn, Al, Ga, In, Ge, Sn, Sb, and Bi. Suitable solid acid components of the cracking **catalysts** are zeolites, especially aluminophosphates (e.g., SAPO, metal APO, Me APSO, ELAPO, and ELAPSO). Cracking is carried out such that the yield of hydrogen is less than the yield of hydrogen when contacting the hydrocarbons with the solid acid component alone. Emissions of NOx from the regeneration cycle of the **catalyst** system are reduced.

ACCESSION NUMBER: 2004:633258 CAPLUS  
 TITLE: Combined petroleum cracking-hydrogen combustion-nitrogen oxide removal **catalysts** containing solid acids and mixed metal oxides  
 INVENTOR(S): Ou, John Di-yi; Sancar, Neeraj  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 26 pp., Cont.-in-part of U.S. Ser. No. 369,880.  
 CODEN: USXXCO  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: English  
 PATENT INFORMATION: 4

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004152586	A1	20040805	US 2003-671281	20030924
US 2004149628	A1	20040805	US 2003-358564	20030205
US 2004152584	A1	20040805	US 2003-358569	20030205
US 2004152585	A1	20040805	US 2003-358977	20030205
PRIORITY APPLN. INFO.:			US 2003-358564	A2 20030205
			US 2003-358569	A2 20030205
			US 2003-358977	A2 20030205
			US 2003-369880	A2 20030220

L38 ANSWER 3 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB We investigate and discuss the catalytic reactivity of a transition metal M (M: Pt, Pd, Ni and Cu) atom on cyclohexane dehydrogenation by performing total energy calcns., based on the d. functional theory. Total atomic charge investigation along the reaction path shows that in breaking a C-H bond of the cyclohexane, the  $\sigma$  donation dominates for a Pd and Cu atom as compared with a Pt atom, and the  $\pi$  back-donation dominates for a Ni atom as compared with a Pt atom. Our results indicate that the excess charge transfer causes more energy required for breaking the C-H bond of the cyclohexane with a Pd, Ni and Cu atom.

ACCESSION NUMBER: 2004:553127 CAPLUS  
 DOCUMENT NUMBER: 141:60451  
 TITLE: Catalytic reactivity of a transition metal (Pt, Pd, Ni and Cu) atom on cyclohexane dehydrogenation  
 AUTHOR(S): Tsuda, Muneaki; Dino, Wilson Agerico; Nakanishi, Hiroshi; Kasai, Hideaki  
 CORPORATE SOURCE: Department of Applied Physics, Osaka University, Suita, 565-0871, Japan  
 SOURCE: Shinku (2004), 47(3), 155-158  
 CODEN: SHINAM; ISSN: 0559-8516  
 PUBLISHER: Nippon Shinku Kyokai  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 2 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A **catalyst** precursor is thermally treated in a tubular rotary furnace under a gas flow blown through the furnace, the gas being at least partially circulated. The active **catalyst** is a multielement oxide comprising at least oxides of molybdenum and vanadium, as well as oxides of tungsten and niobium, or a **catalyst** of the general formula  $\text{Mo}x\text{V}y\text{Nb}z\text{W}t\text{M}1\text{M}2\text{d}$ , where M1 is Te and/or Sb, and M2 is a metal selected from Nb, Ta, V, Ti, Al, Zr, Cr, Mn, Ga, Fe, Ru, Co, Rh, Ni, Pd, Pt, La, Bi, B, Ce, Sn, Zn, Si, Na, Li, K, Mg, Ag, Au, and In. The **catalysts** are especially suited for partial oxidation of acrolein to acrylic acid. Thus, a multimetal oxide of the stoichiometric formula  $\text{Mo}12\text{V}3\text{W}1.2\text{Cu}2.4\text{Ox}$  was produced by thermal treatment of a precursor under nitrogen-enriched air flow (2.99% volume of  $\text{O}_2$ ) containing 4% volume of  $\text{NH}_3$ , followed by depositing onto a hollow support. The **catalyst** was used for partial oxidation of acrolein showing a conversion of 97% and a selectivity towards acrylic acid of 94.8%.

ACCESSION NUMBER: 2004:605537 CAPLUS  
 TITLE: Thermal treatment of multielement oxide **catalyst** precursors used for partial oxidation of acrolein to acrylic acid  
 INVENTOR(S): Dieterle, Martin; Foepel, Wolfgang Juergen; Berndt, Silke; Felder, Raimund; Unverricht, Signe; Mueller-Engel, Klaus Joachim  
 PATENT ASSIGNEE(S): BASF Ag, Germany  
 SOURCE: Ger. Offen., 29 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

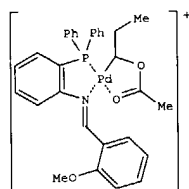
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10360057	A1	20040729	DE 2003-10360057	20031219
PRIORITY APPLN. INFO.:			DE 2003-10360057	20031219

L38 ANSWER 4 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The **catalysts** consist of (A) Group IVB, VIIB, VIII (excluding Ni, Pd, and Pt), IIB, and/or IIIA metals and (B) polycarboxylate ligands  $\text{Zn}x(\text{CO}_2\text{H})_p(\text{CO}_2\text{-})_n$  [Z = R, RO, RS, ROCO, RCO<sub>2</sub>, RHNCO, or RCONH (R = hydrocarbyl), halo, cyano, nitro; Ar = aromatic ring; n = 1-6; p = 0-5; m = 0-6]. Diols and dicarboxylic acids or their esters are polymerized in the presence of [0.0005-0.05 mol% (based on total molar number of the dicarboxylic acid)] the **catalysts** to give polyesters. Thus, propoxylated bisphenol A, terephthalic acid, isophthalic acid, and maleic anhydride were polymerized in the presence of 0.0102 mol% (as Ti, to acid) Ti-terephthalate complex at 220-230° to give a polyester with hydroxy value 12, Tg 59°, Mn 6910, and peak-top mol. weight 19810.

ACCESSION NUMBER: 2004:472454 CAPLUS  
 DOCUMENT NUMBER: 141:24143  
 TITLE: Long-life polymerization **catalysts** and preparation of polyesters in their presence  
 INVENTOR(S): Sakurai, Yoko  
 PATENT ASSIGNEE(S): Sanyo Chemical Industries, Ltd., Japan  
 SOURCE: Jpn Kokai Tokkyo Koho, 27 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004161977	A2	20040610	JP 2003-18312	20030128
PRIORITY APPLN. INFO.:			JP 2002-273732	A 20020919

OTHER SOURCE(S): MARPAT 141:24143



AB I and similar complexes of Ni, Pd and other transition metals of 3-12 groups are useful as catalysts by themselves or together with co-catalysts (MxRy)z (M = metals of 1-14 group, such as Li, Mg, Sc, Ti, Si, Sn, especially B and Al, R = H, halogen or C1-20 radical, x, y and z = 1-5) for polyvinyl ester manufacturing. Thus, mixing 522 mg of [2-methoxybenzylidene-(2-diphenylphosphanylphenyl)amine]methylpalladium chloride with 195 mg of AgBF<sub>4</sub> in the CH<sub>2</sub>Cl<sub>2</sub>-acetonitrile mixture and heating the resulting complex with vinyl acetate in CH<sub>2</sub>Cl<sub>2</sub> 20 h at 40° gives I, useful together with AlMe<sub>3</sub> for ionic polymerization of vinyl acetate at room temperature.

ACCESSION NUMBER: 2004:453267 CAPLUS  
DOCUMENT NUMBER: 141:24136  
TITLE: Transition metal catalysts for producing polyvinyl esters  
INVENTOR(S): Dickner, Tim; Schottek, Joerg; Schulte, Joerg Ludwig  
PATENT ASSIGNEE(S): Celanese Ventures GmbH, Germany  
SOURCE: PCT Int. Appl., 27 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004046209	A1	20040603	WO 2003-EP12538	20031111
W: BR, CA, CN, ID, JP, KR, MX, US RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
DE 10254093	A1	20040609	DE 2002-10254093	20021120
DE 2002-10254093 A 20021120				

PRIORITY APPLN. INFO.:  
OTHER SOURCE(S): MARPAT 141:24136

L38 ANSWER 7 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB A hydrogen generator capable of operating in any orientation and having no moving parts includes a catalyst retaining structure. The catalyst retaining structure is disposed in a housing and serves to sep. the housing into a fuel holding portion and a hydrogen chamber. The catalyst retaining structure also includes pores, each pore being in communication with the fuel holding and hydrogen chambers. A catalyst, that promotes the generation of hydrogen gas upon contact with the fuel, is disposed within the pores. The catalyst can be a transition metal, such as Ru, Co, Ni, Pd, Pt, Mo, Mn, Fe, Cr, or Zn. The fuel enters the pores and thereupon generates hydrogen gas which passes into the hydrogen chamber. Contact of the fuel with the catalyst in the pores may be controlled and the position of the fuel-hydrogen interface within the pore may be moved so as to regulate the generation of hydrogen. The catalyst retaining structure can take different forms, including one or more hollow elongated members or plates, and may further incorporate hydrophobic and/or hydrophilic membranes.

ACCESSION NUMBER: 2004:412876 CAPLUS  
DOCUMENT NUMBER: 140:377427  
TITLE: Hydrogen generator  
INVENTOR(S): Shallesh, A. Shah; Michael, T. Kelly  
PATENT ASSIGNEE(S): Millennium Cell, Inc., USA  
SOURCE: PCT Int. Appl., 41 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004041714	A2	20040521	WO 2003-US35186	20031105
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, GU, HK, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, SM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004120889	A1	20040624	US 2003-701692	20031105
US 2002-423865P P 20021105				
US 2003-454297P P 20030313				

PRIORITY APPLN. INFO.:  
OTHER SOURCE(S):

L38 ANSWER 6 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB The method comprises reacting flue gases containing organic halogen compds. (especially, PCB) with Na metal and H<sub>2</sub> as reducing agent under inert gas atmospheric (especially, N<sub>2</sub>) in a catalytic dechlorination reactor at 90-150° and 1 atmospheric for 0.5-3 h, purging inert gas through the catalyst bed, applying elec. induction heat onto the gas passage, regenerating the spent catalyst and introducing the recovered N<sub>2</sub> and H<sub>2</sub> into the catalytic dechlorination reactor. The dechlorination catalyst contains 21 metals of Pd, Ni, Co and/or Cu on porous support made of TiO<sub>2</sub>, activated carbon, Fe<sub>2</sub>O<sub>3</sub>, and NiO. The method extends the service life of catalyst bed and reduces operation time.

ACCESSION NUMBER: 2004:432869 CAPLUS  
DOCUMENT NUMBER: 140:411385  
TITLE: Method for treatment of organic halogen compounds in waste gases  
INVENTOR(S): Minami, Hirokazu; Morimoto, Keiji  
PATENT ASSIGNEE(S): Kubota Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

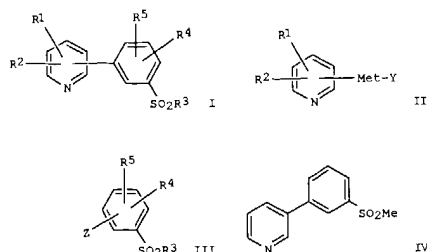
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004148268	A2	20040527	JP 2002-319176	20021101
JP 2002-319176				

PRIORITY APPLN. INFO.:  
OTHER SOURCE(S):

L38 ANSWER 8 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
AB Anodic performances of alkali borohydrides on several electrocatalysts such as Ni, Raney Ni, Pd, Pt, Cu, Au were studied in an effort to develop suitable electrode materials for a borohydride-fueled fuel cell. The open-circuit potentials (OCPs), polarization performances, and hydrogen evolution behaviors were examined in a 3-electrode system. The open-circuit potential is dependent on borohydride concentration and also influenced by the electrocatalyst. In concentrated borohydride solns. used electrode polarizations were less influenced by the fuel concentration. Borohydrides on different electrocatalysts showed different hydrogen evolution behaviors. The relation of hydrogen evolution rate with the anode current was found to change not only with the concentration of borohydride and but also with the electrode material. Comparison of anodic behaviors of borohydride on different electrodes implies that the anodic oxidation of borohydride, as a multi-step process, may take different reaction paths, depending on the electrocatalyst and reaction conditions such as the borohydride concentration.

ACCESSION NUMBER: 2004:396685 CAPLUS  
DOCUMENT NUMBER: 141:113002  
TITLE: Electrocatalysts for the anodic oxidation of borohydrides  
AUTHOR(S): Liu, Bin Hong; Li, Zhou Peng; Suda, Seijirau  
CORPORATE SOURCE: Department of Environmental and Chemical Engineering, Kogakuin University, Hachioji, Tokyo, 192-0015, Japan  
SOURCE: Electrochimica Acta (2004), 49 (19), 3097-3105  
CODEN: ELCAAV; ISSN: 0013-4686  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 10  
THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L38 ANSWER 9 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
GI



AB The invention relates to a method of preparation of sulfonylphenylpyridine derivatives of formula I [wherein: R<sub>1</sub>, R<sub>2</sub>, R<sub>4</sub>, R<sub>5</sub> are independently represent H, a linear and/or branched C<sub>1</sub>-C<sub>4</sub> alkyl, and/or an (hetero)aryl, or R<sub>1</sub> and R<sub>2</sub> and/or R<sub>4</sub> and R<sub>5</sub>, taken together, form a C<sub>3</sub>-C<sub>8</sub> ring, a (hetero)aryl; R<sub>3</sub> represents a linear, branched or cyclic C<sub>1</sub>-C<sub>8</sub> alkyl and/or a (hetero)aryl] via Pd- or Ni-catalyzed cross-coupling reaction of compds. of formulas II and III [wherein: Met is Mg or Zn; Y is Cl, Br, I, or acetoxy; Z is I, Br, Cl, triflate, sulfonate and/or sulfone]. For instance, sulfone compound IV was synthesized with a yield of 80% via cross-coupling reaction of 3-bromophenylmethyl sulfone, Pd(PPh<sub>3</sub>)<sub>4</sub> as a catalyst, ZnCl<sub>2</sub>, and the Grignard reagent prepared from 3-bromopyridine.

ACCESSION NUMBER: 2004:390226 CAPLUS  
DOCUMENT NUMBER: 140:406741  
TITLE: A process for preparation of sulfonylphenylpyridine derivatives via catalytic cross-coupling reaction  
INVENTOR(S): Palocchi, Maurizio; Ponzini, Francesco; Nicolini, Marco  
PATENT ASSIGNEE(S): Euticals Prime European Therapeutics Spa, Italy  
SOURCE: PCT Int. Appl., 20 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004039779	A1	20040513	WO 2002-IT626	20021002

L38 ANSWER 10 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB At temperature 20...80°C, under 1,0 MPa hydrogen pressure, in the presence of industrial catalysts suspension containing Pd, Ni, Co-Mo, Ni-Ti, Pt, Cu, the liquid phase reaction 1,3-pentadiene hydrogenation is carried out. The influence of a nature of the solvent on speed of reaction and a hydrogenate composition is shown.

ACCESSION NUMBER: 2004:377063 CAPLUS  
TITLE: Efficiency of industrial catalysts for liquid-phase 1,3-pentadiene hydrogenation  
AUTHOR(S): Mel'nik, L. B.; Bobylev, B. N.; Srednev, S. S.; Rybina, G. V.  
CORPORATE SOURCE: Yarosl. Gos. Tekh. Univ., Yaroslavl, Russia  
SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya Tekhnologiya (2003), 46(9), 21-23  
CODEN: IYUKAR; ISSN: 0579-2991  
PUBLISHER: Ivanovskii Gosudarstvennyi Khimiko-Tekhnologicheskii Universitet  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

L38 ANSWER 9 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
PRIORITY APPLN. INFO.: WO 2002-IT626 20021002  
OTHER SOURCE(S): CASREACT 140:406741; MARPAT 140:406741

L38 ANSWER 11 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Removal of oxygen from a gas containing oxygen, one or more olefins, CO, H<sub>2</sub>, and, optionally, one or more alkynes, is carried out over a selective oxidation catalyst consisting of a Group 10 or Group 11 metal or metal oxide supported on an oxide support, such that: (1) tin is included when the oxidation catalyst is a Group 10 element, and (2) the zeolite is the support when the oxidation catalyst is a Group 11 element. Suitable element compns. include: (1) Cu, Ag, and Au supported on zeolite A or zeolite X; and (2) Ni, Pd, and Pt supported on SiO<sub>2</sub> or Al<sub>2</sub>O<sub>3</sub>. Selective oxidation is carried out at 50-300° and 15-35 bars. The catalysts, which oxidize H<sub>2</sub> and CO (using trace O<sub>2</sub> in the gas) but do not catalyze the conversion of olefins and alkynes, are suitable for post-processing of alkene-rich gases from hydrocarbon pyrolysis.

ACCESSION NUMBER: 2004:333806 CAPLUS  
DOCUMENT NUMBER: 140:323936  
TITLE: Selective oxidation catalysts for removal of oxygen, hydrogen, and carbon monoxide from petroleum pyrolysis gases  
INVENTOR(S): Hague, Matthew; Little, Ian Raymond; Smith, Warren John  
PATENT ASSIGNEE(S): BP Chemicals Limited, UK  
SOURCE: PCT Int. Appl., 29 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004033598	A1	20040422	WO 2003-GB4052	20030923

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
PRIORITY APPLN. INFO.: GB 2002-23300 A 20021008  
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L38 ANSWER 12 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Polyesters are prepared by polycondensation of (a) dicarboxylic acids or their ester-forming derivs. with diols or their ester-forming derivs. in the presence of **catalysts** prepared by dewatering and drying of hydrolyzates or Ti halides or Ti alkoxides by using alcs., followed by dissolving the obtained solid Ti compds. in ethylene glycol-containing solns., wherein Ti content derived from the solid Ti compds. is 500-100,000 ppm. The **catalysts** for polyester preparation may involve 21 compds. of elements selected from Be, Mg, Ca, Sr, Ba, B, Al, Ga, Mn, Co, Zn, Ge, Sb and P. The hydrolyzates may involve 21 compds. of elements selected from Be, Mg, Ca, Sr, Ba, Sc, Y, La, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Fe, Ru, Co, Rh, Ni, Pd, Cu, Zn, B, Al, Ga, Si, Ge, Sn, Sb and P. Thus, transesterification of terephthalic acid with ethylene glycol and subsequent liquid-phase polycondensation in the presence of an ethylene glycol solution of the Ti **catalyst** and H3PO4 to give poly(ethylene terephthalate) with intrinsic viscosity ( $\eta$ ) 0.68 dL/g, which was precrystd. at 170° and solid-phase polymerized at 220° to increase the mol. weight until  $\eta$  reached 0.84 dL/g. The polyester was dried and injection-molded at 265-275° while adding 1 ppm 2,5,7,8-tetramethyl-2-(4',8',12'-trimethyltridecyl)coumaron-6-ol to give bottles with acetaldehyde content 8.9 ppm/2.0 g polyester.

ACCESSION NUMBER: 2004:287083 CAPLUS  
 DOCUMENT NUMBER: 140:288207  
 TITLE: Polyesters with low acetaldehyde content, their compositions, and their hollow moldings  
 INVENTOR(S): Hama, Takashi; Nakamachi, Hiroshi  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004107383	A2	20040408	JP 2002-268500	20020913
PRIORITY APPLN. INFO.: JP 2002-268500 20020913				

L38 ANSWER 14 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The photocatalytic reaction with TiO2 particle using sunlight which decomps. various environmental pollutants has been studied extensively. This study considered the immobilization of the TiO2 (A) particle on a brass substrate by a composite coating method. It was found that photocatalytic activity changed with differences in the immobilization metal (Ag, Ni, Pd, Cu)-TiO2(A) and the Ag-TiO2(A) composite film was shown the most remarkable photocatalytic activity.

ACCESSION NUMBER: 2004:207613 CAPLUS  
 DOCUMENT NUMBER: 141:61952  
 TITLE: Photocatalytic activity of Ag-TiO2 (anatase) composite film prepared by composite coating  
 AUTHOR(S): Yamaguchi, Fumio; Fujita, Tomohiro; Kannaga, Yashiro;  
 CORPORATE SOURCE: Ui, Koichi; Idemoto, Yasushi; Koura, Nobuyuki  
 SOURCE: Course of Industrial Chemistry, Kinki Polytechnic College, Kishiwada, Osaka, 596-0103, Japan  
 SOURCE: Electrochemistry (Tokyo, Japan) (2004), 72(3), 156-158  
 CODEN: ECTCFA; ISSN: 1344-3542  
 PUBLISHER: Electrochemical Society of Japan  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 12  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 13 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The alloy **catalyst** for MeOH fuel cell cathodes and/or anodes is  $MxM'yM''z$  ( $M = Fe, Co, or Ni$ ;  $M' = Pt or Pd$  but not  $Co-Pd$  or  $Ni-Pd$  in  $M-M'$  combination;  $M'' = B, Bi, Sb, Sn, Ag$ , and/or  $Pb$ ; 2 atomic%  $\leq z \leq 10$  atomic%, (2/3)  $\leq (x/y) \leq 3/2$ ) having at least some L10 ordered phase. The **catalyst** is prepared by dissolving 21 salt or complex of M, 21 salt or complex of M', and 21 salt or complex of M'' in an alc., an aqueous alc. solution, or an alc. mixture in the presence of an organic protecting agent or activated C and refluxing the mixture solution in an inert atmospheric The fuel cell uses the alloy **catalyst** particles having diameter 1-50 nm.

ACCESSION NUMBER: 2004:219400 CAPLUS  
 DOCUMENT NUMBER: 140:256292  
 TITLE: Alloy **catalyst** for methanol fuel cell electrodes, its manufacture, and the fuel cell  
 INVENTOR(S): Daimon, Hideo  
 PATENT ASSIGNEE(S): Hitachi Maxell Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004087454	A2	20040318	JP 2003-36159	20030214
PRIORITY APPLN. INFO.: JP 2002-117106 A 20020419				
				JP 2002-192869 A 20020702

L38 ANSWER 15 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Energy is generated by reacting urea with water to form ammonia and oxidizing the ammonia to form water and nitrogen. The reaction of urea with water is carried out at 140-240° and 30-50 atm, optionally in the presence of a **catalyst**, especially oxides of Fe, Ni, V, and Zn, or the enzyme urease. A combustible fuel, preferably ammonia or hydrogen, and/or a combustion enhancer can be added to the reaction mixture. The formed ammonia is combusted in an engine. The formation of nitrogen oxides during the combustion step can be reduced by addition of urea as a reducing agent. The ammonia can be contacted with a **catalyst** consisting of iron (II) oxide or iron (III) oxide promoting the formation of hydrogen which is subsequently combusted in the presence of a Pt-containing **catalyst**. Urea and water can be reacted in the absence of an oxidizing agent and in the presence of a **catalyst** to form hydrogen. The **catalyst** contains Pt, Pd, Ni, Co, Fe, Cu, Zn, Ti, V, Mo, Rh, Ru, Zr, W, Re, Ag, or Au. Fuel cells are used to generate electricity from hydrogen, ammonia, or directly from urea. The method and apparatus are used to generate energy for use in stationary and mobile applications.

ACCESSION NUMBER: 2003:930715 CAPLUS  
 DOCUMENT NUMBER: 139:367495  
 TITLE: Fuel cell for generating electricity using urea and water  
 INVENTOR(S): Amendola, Steven C.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 20 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003219371	A1	20031127	US 2003-408731	20030407
PRIORITY APPLN. INFO.: US 2002-372530P P 20020415				

L38 ANSWER 16 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The stereoselectivity of the formation of bis-chelates with the 1,9-disubstituted chiral semicorrin ligands (1S,9S)-dimethyl 5-cyanosemicorrin-1,9-dicarboxylate (1) for Co2+, Ni2+, Cu2+, and Pd2+ and with its (1S,9S)-diethyl analog 2 for Co2+ and Cu2+ were measured by the method of continuous variation of enantiomers, and with 1 for Zn2+ by NMR. Pos. selectivities were found for Co2+, Ni2+, and Zn2+ complexes, whereas very high neg. selectivities prevail in the complexes of Cu2+ and Pd2+. These results are rationalized by x-ray structural detns. of some of the corresponding complexes. The optically active Cu2+ and Pd2+ complexes show distorted square planar structures with chirality predctd. by the chirality of the ligand. Ni2+ complexes are five or hexacoordinated and exhibit a distorted tetrahedral arrangement of the four coordinated N atoms. In the optically active compound the ester moiety is coordinated by the O atom of the alkoxy group and the arrangement of the two N-N chelate rings shows A-(S,S) chirality. With the racemic ligand, it is not the more stable heterochiral, but the racemic complex containing the two homochiral enantiomers which was obtained. The coordination of the ester groups occurs by the carbonyl O and the chirality is opposite to the optically active compound, e.g. A-(S,S)/A-(R,R). The structure of the optically active Zn compound shows very weak interaction with the alkoxy group of one ester moiety of each ligand mol. and the chirality of the N-N-chelate rings is A-(S,S). Again, the compound obtained with the racemic ligand contains the enantiomers of the homochiral complex, the chirality of which is A-(R,R)/A-(S,S). The results are discussed with respect to the possibility to perform asym. amplifications of the 1:1 complexes of semicorrin ligands as enantioselective catalysts.

ACCESSION NUMBER: 2003:911987 CAPLUS  
 DOCUMENT NUMBER: 140:331238  
 TITLE: Non-linear effects in asymmetric reactions: Negative and positive stereoselectivity in the formation of homoleptic 1:2 metal to ligand complexes of chiral 1,9-disubstituted semicorrin ligands  
 AUTHOR(S): Guicher, Nathalie; Stoeckli-evans, Helen; Bernauer, Klaus  
 CORPORATE SOURCE: Institute de Chimie, Universite de Neuchatel, Neuchatel, CH-2007, Switz.  
 SOURCE: Chimia (2003), 57(10), 581-585  
 CODEN: CHIMAD; ISSN: 0009-4293  
 PUBLISHER: Swiss Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 17 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Dihalogenometal(II) complexes with bidentate phosphane ligands of the general type [M(Ph2P(CH2)nPPh2)X2] with n = 2 to 5, X = Cl or Br and M = Co, Ni or Pd have been utilized as catalysts for the vinyl/addition polymerization of norbornene. These complexes can be activated with the Lewis-acids methylalumoxane (MAO) or tris(pentafluorophenyl)borane, B(C6F5)3 in combination with triethylaluminum (AlEt3). The nickel(II) and palladium(II) complexes show very high polymerization activities up to 107 gpolymer/molPd-1 h-1. Yet, the complexes Pd(dppe)Cl2 (5, 1.9 + 107 gpolymer/molPd-1 h-1) and Pd(dppp)Cl2 (6, 3.0 + 103 gpolymer/molPd-1 h-1) demonstrated that small changes in the ligand structure could have great effects on the polymerization activity [dppe = 1,2-bis(diphenylphosphino)ethane, Ph2P(CH2)2PPh2; dppp = 1,3-bis(diphenylphosphino)propane, Ph2P(CH2)3PPh2]. The activation process of the pre-catalysts 5 and 6 in combination with B(C6F5)3/AlEt3 was followed by multinuclear (1H, 19F, and 31P) NMR investigations and by reaction with B(C6F5)3 and Ag[closo-1-CB11H12]. The reaction of B(C6F5)3 and AlEt3 leads to an aryl/alkyl group exchange resulting in the formation of AlEt3-n(C6F5)n and B(C6F5)3-nEt3 with Al(C6F5)3 and BEt3 as main products for an about equimolar ratio. AlEt3-n(C6F5)n will then react with the pre-catalysts and abstract the chloride atoms to form [M(Ph2P(CH2)nPPh2)]2+ as the active species for the polymerization. The higher polymerization activity of 5/B(C6F5)3/AlEt3 compared to 6/B(C6F5)3/AlEt3 can be explained by a ligand redistribution reaction of unstable [PdII(dppe)]2+ to give inactive and isolable [PdII(dppe)2]2+ and highly active, "naked" Pd2+ cations together with the lower coordinating ability of the anionic adduct [Cl-Al(C6F5)3]- in comparison to [Cl-B(C6F5)3]-. The Lewis-acid Al(C6F5)3 is much more activating than B(C6F5)3. The [Pd(dppe)2]2+ cation from the ligand redistribution was isolated in the (X-ray) structurally elucidated compds. [PdII(dppe)2][ClB(C6F5)3]2·4CH2Cl2 and [PdII(dppe)2][CB11H11Cl]2·3CH2Cl2. The stable [Pd(dppp)]2+ cation from 6 could be crystallized as [PdII(dppp)(CB11H12)][CB11H12] (CB11H12 = mono-anionic carborane [closo-1-CB11H12]-).

ACCESSION NUMBER: 2003:905924 CAPLUS  
 DOCUMENT NUMBER: 140:164274  
 TITLE: Dihalogeno(diphosphane)metal(II) complexes (metal = Co, Ni, Pd) as pre-catalysts for the vinyl/addition polymerization of norbornene - elucidation of the activation process with B(C6F5)3/AlEt3 or Ag[closo-1-CB11H12] and evidence for the in situ formation of "naked" Pd2+ as a highly active species  
 AUTHOR(S): Lassahn, Paul-Gerhard; Lozan, Vasilie; Wu, Biao; Weller, Andrew S.; Janiak, Christoph  
 CORPORATE SOURCE: Institut fuer Anorganische und Analytische Chemie, Universitat Freiburg, Freiburg, 78104, Germany  
 SOURCE: Dalton Transactions (2003), (23), 4437-4450  
 CODEN: DTTARF; ISSN: 1477-9226  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 121 THERE ARE 121 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 17 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

L38 ANSWER 18 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The effect of the addition of different metals (Cu, Rh, Pd, Ir, and Pt) into supported Ni catalysts on the catalytic performance of methane decomposition into pure hydrogen and carbon was examined. The addition of Pd brought about considerable increases in the catalytic life and in the accumulated yields of hydrogen and carbon at the complete deactivation of the catalyst, while modification with the other metals decreased the yields compared to those for Ni/SiO2. For the Ni catalysts modified with Pd, the appropriate preparation conditions of the catalysts, the effect of catalytic supports, and the optimum reaction temperature on the methane decomposition were examined. The hydrogen yield attained a high value, 16,000 molH2/molPd+Ni, when Pd and Ni were of a mole ratio Pd/(Pd+Ni)=0.5 and a total loading Pd+Ni=37 wt% on carbon nanofiber support. This yield is the highest among those reported so far. Methane decomposition over Ni catalysts modified with Pd produced carbon nanofibers with unique structures, i.e., branched carbon nanofibers. XRD studies on the catalysts modified with Pd indicated the formation of Pd-Ni alloys. The alloys are responsible for the increase in the catalytic life and the formation of carbon nanofibers with unique structures.

ACCESSION NUMBER: 2003:899761 CAPLUS  
 DOCUMENT NUMBER: 140:113605  
 TITLE: Methane decomposition into hydrogen and carbon nanofibers over supported Pd-Ni catalysts  
 AUTHOR(S): Takenaka, Sakae; Shigeta, Yukio; Tanabe, Eishi; Otsuka, Kiyoshi  
 CORPORATE SOURCE: Graduate School of Science and Engineering, Department of Applied Chemistry, Tokyo Institute of Technology, Ookayama, Meguro-ku, Tokyo, 152-8552, Japan  
 SOURCE: Journal of Catalysis (2003), 220(2), 468-477  
 CODEN: JCTLA5; ISSN: 0021-9517  
 PUBLISHER: Elsevier Science  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 19 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Title compds. are prepared by reaction of R1CN (R1 = H, aliphatic, aromatic, or araliph. group) with H2NCHR2CHR3NHR4 (R2, R3 = H, aliphatic, aromatic, or araliph. group; R4 = aliphatic, aromatic, or araliph. group) in the presence of catalysts chosen from metal oxides, metal salts, organic acids, or solid acids and dehydrogenation under heating using Ni, Pd, Pt, and/or Cu catalysts. Quaternary imidazolium salts are prepared by quaternization of the imidazoles. N-ethylethylenediamine was cyclocondensed with MeCN in MeOH in the presence of Zn acetate at 200° for 3 h to give 1-ethyl-2-methylimidazoline with 99% selectivity at 93% conversion, which was heated with N 103B at 180° for 5 h to give 1-ethyl-2-methylimidazole with 92% selectivity at 90% conversion.

ACCESSION NUMBER: 2003:870612 CAPLUS  
 DOCUMENT NUMBER: 139:350738  
 TITLE: Preparation of N-substituted imidazoles  
 INVENTOR(S): Takahashi, Fumiharu; Yoshimura, Hiroyuki  
 PATENT ASSIGNEE(S): Tosoh Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003313172	A2	20031106	JP 2002-120563	20020423
PRIORITY APPLN. INFO.: JP 2002-120563 20020423				
OTHER SOURCE(S): CASREACT 139:350738; MARPAT 139:350738				

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 AB The process comprises: coating a non-conductive substrate with an aqueous solution containing catalyst metals, drying, reducing the substrate, and electroless plating. Preferably, the catalyst metal-containing aqueous solution contains aminosilane compound, and the catalyst metal is Ag, Cu, Ni, Pd, Au and/or Pt.

ACCESSION NUMBER: 2003:868437 CAPLUS  
 DOCUMENT NUMBER: 139:354933  
 TITLE: Formation of electroless plating membranes having good adhesion  
 INVENTOR(S): Suzuki, Yoshihiro; Matsui, Fujio; Suzuki, Shoichiro; Minami, Yukie; Tachibana, Shinji; Yamamoto, Hisamitsu  
 PATENT ASSIGNEE(S): Uemura Kogyo Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003313670	A2	20031106	JP 2002-118948	20020422
PRIORITY APPLN. INFO.: JP 2002-118948 20020422				

L38 ANSWER 20 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Catalytic compns. are suited for use in hydrogenation processes for organic compds., as in amination of alcs. or hydrogenation of nitro groups to the amine. The catalytic composition is an improvement in Ni catalysts promoted with Pd carried on a support. The improvement resides in including a promoting effect metal M and/or its oxide, selected from Zn, Cd, Cu, and Ag, typically .apprx.0.01-10% (based on weight of the support). The presence of Zn in the Pd/Mi monolith catalyst effectively suppressed formation of lights and tars (by products) even at concns. as low as 0.3 wt% based on support.

ACCESSION NUMBER: 2003:870476 CAPLUS  
 DOCUMENT NUMBER: 139:339277  
 TITLE: Metal modified Pd/Ni catalysts and hydrogenation  
 INVENTOR(S): Ding, Hao  
 PATENT ASSIGNEE(S): Air Products and Chemicals, Inc., USA  
 SOURCE: Eur. Pat. Appl., 9 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1358935	A1	20031105	EP 2003-8826	20030424
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2003207761	A1	20031106	US 2002-137053	20020501
US 6762324	B2	20040713		
CN 1454713	A	20031112	CN 2003-128451	20030429
JP 2003340283	A2	20031202	JP 2003-124631	20030430
PRIORITY APPLN. INFO.: US 2002-137053				A 20020501

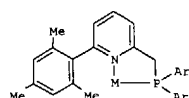
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 22 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The invention refers to a water gas shift reaction catalyst suitable for use in fuel cells, comprising at least one metal A (Pt, Pd, Ni, IR, Rh, Co, Os, Ru, Fe, Re, Te, or Mn) and one metal B (Au, Ag or Cu) on a metallic oxide support for increased catalytic activity.

ACCESSION NUMBER: 2003:840869 CAPLUS  
 DOCUMENT NUMBER: 139:342312  
 TITLE: Catalyst for water gas shift reaction  
 INVENTOR(S): Sakurai, Hiroaki; Tsubota, Toshi; Haruta, Masatake; Ueda, Atsushi; Kobayashi, Akihiko  
 PATENT ASSIGNEE(S): National Institute of Advanced Industrial Science and Technology, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003305364	A2	20031028	JP 2002-114488	20020417
PRIORITY APPLN. INFO.: JP 2002-114488 20020417				





I

AB Two bulky phosphino-pyridine ligands (6-mesityl-2-(diarylphosphino)methylpyridine, P.apprx.N) were successfully prepared by Suzuki coupling of mesitylboronic acid with 6-bromo-2-picoline followed by phosphinylation with Ar<sub>2</sub>PCl (Ar = mesityl, 2-tolyl). These ligands readily form the Pd and Ni complexes, e.g., I (M = PdClMe, NiBr<sub>2</sub>, Ar = mesityl), upon treatment with (COD)PdMeCl and (DME)NiBr<sub>2</sub>, resp. These P.apprx.N chelating Pd(II) and Ni(II) complexes were characterized by both spectral data and x-ray crystallog. The coordination geometry around the metal center is square planar for the Pd(II) complexes and tetrahedral for the Ni(II) complexes. The cationic methylpalladium(II) complexes showed poor activity in the catalytic polymerization of ethylene, but the Ni complexes were highly active with the activation of MAO. The Ni complexes, e.g., I (M = NiBr<sub>2</sub>, Ar = mesityl), catalyzed the polymerization of ethylene with an Al/Ni ratio of 150, whereas di- and trimerization was observed when the Al/Ni ratio is 500. The obtained polyethylenes are highly crystalline

ACCESSION NUMBER: 2003:826170 CAPLUS  
DOCUMENT NUMBER: 140:42287  
TITLE: New Bulky Phosphino-Pyridine Ligands. Palladium and Nickel Complexes for the Catalytic Polymerization and Oligomerization of Ethylene  
AUTHOR(S): Chen, Hsin-Pei; Liu, Yi-Hung; Peng, Shie-Ming; Liu, Shih-Tzung  
CORPORATE SOURCE: Department of Chemistry, National Taiwan University, Taipei, 106, Taiwan  
SOURCE: Organometallics (2003), 22 (24), 4893-4899  
CODEN: ORGN7; ISSN: 0276-7333  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 140:42287  
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

AB Electrochem. conversion of CO<sub>2</sub> with nitrate ions into useful material consisting of C-N bond under the mild condition has attracted much attention. Simultaneous reduction of CO<sub>2</sub> and nitrate ions was studied at gas-diffusion electrodes with various metallophthalocyanine (M-Pc, M: Ti, V, Cr, Mo, Fe, Ru, Co, Ni, Pd, Cu, Zn, Cd, Ga, In, Ge, Sn and Pb) catalysts. The current efficiencies of CO formation at Co-Pc and Ni-Pc catalysts in the reduction of CO<sub>2</sub> alone are extremely higher than that at metal catalysts, hence these M-Pc catalysts were expected to have a fairly high ability for urea formation. However, since the reduction of nitrate ions to nitrite ions and NH<sub>3</sub> does not occur at the M-Pc catalysts, urea is not formed in the simultaneous reduction of CO<sub>2</sub> and nitrate ions. For the urea formation, simultaneous generation of NH<sub>3</sub>- and CO-like precursors at the catalysts was necessary.

ACCESSION NUMBER: 2003:799855 CAPLUS  
DOCUMENT NUMBER: 140:66635  
TITLE: Simultaneous reduction of carbon dioxide and nitrate ions at gas-diffusion electrodes with various metallophthalocyanine catalysts  
AUTHOR(S): Shibata, Masami; Furuya, Nagakazu  
CORPORATE SOURCE: Department of Applied Chemistry, University of Yamaguchi, 4-3-11 Takeda Kofu, 400-8511, Japan  
SOURCE: Electrochimica Acta (2003), 48 (25-26), 3953-3958  
CODEN: ELCNAV; ISSN: 0013-4686  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

AB A method for production of polyoxymethylene comprises contacting a formaldehyde source with a catalyst of the formula [R1(CO)CR2(CO)R3]nMZ, where M is TiO, ZrO, HfO, VO, CrO<sub>2</sub>, MoO<sub>2</sub>, WO<sub>2</sub>, MnO<sub>2</sub>, ReO<sub>2</sub>, Fe, Ru, Co, Rh, Ir, Ni, Pd, Pt, Cu, Zn, Cd, Hg, Sn, SnO or PbO; R1, R2 and R3 are independently groups chosen from H, alkyl, aryl, or arylalkyl; R1, R2 and R3 can be completely or partly halogenated; Z is an anion; and n is 1 or 2. catalyst, chlorodioxo(2,4-pentanedione)molybdenum was produced and used as a catalyst to copolymerize 1,3-dioxepane and trioxane at 80°. The produced copolymer had weight-average mol. weight of 95,000 and polydispersity of 5.5.

ACCESSION NUMBER: 2003:818473 CAPLUS  
DOCUMENT NUMBER: 139:308120  
TITLE: Production of polyoxymethylene in the presence of diketonate metal complexes  
INVENTOR(S): Luinatra, Gerrit  
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany  
SOURCE: PCT Int. Appl., 25 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003085016	A1	20031016	WO 2003-EP3744	20030410
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
DE 10215976	A1	20031023	DE 2002-10215976	20020411
PRIORITY APPLN. INFO.:			DE 2002-10215976	A 20020411
OTHER SOURCE(S):	MARPAT 139:308120			
REFERENCE COUNT:	9		THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE	
FORMAT				

AB The process involves H termination of a substrate surface, selective removal of the H to expose the substrate which is then brought in contact with a metal forming alloys with the substrate, and VLS growth while heating at a temperature at which H on the surface does not be dissociated and at which the metal melts to provide nanoscale fine structures on the substrate surface. Preferably, the selective removal of H is run by irradiating an electron beam to provide a desired pattern, then the substrate surface is coated with the metal. In another alternative, the H-terminated substrate surface is irradiated with an ion beam of a metal which forms the alloy for selective removal of H and for contact of the metal and the substrate. The substrate may comprise Si or SiC. The metal may be selected from Au, Fe, Pt, Ni, Pd, Cu, Gd, Mg, and Os. In another alternative, a substrate surface is provided with an oxide layer which is then patterned to give an oxide mask, then a metal forming the alloy is placed on the exposed substrate surface, melted upon heat for VLS growth catalyzed with the formed alloy to give a nanoscale fine structure of a self-assembled crystal, and the oxide mask is subsequently removed.

ACCESSION NUMBER: 2003:767698 CAPLUS  
DOCUMENT NUMBER: 139:283792  
TITLE: Preparation of nanoscale fine structures on desired sites of substrate by VLS growth  
INVENTOR(S): Takeda, Seiji; Ueda, Kohel  
PATENT ASSIGNEE(S): The New Industry Research Organization, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 200327200	A2	20031002	JP 2002-84042	20020325
PRIORITY APPLN. INFO.:			JP 2002-84042	20020325

L38 ANSWER 27 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A review. This review briefly describes catalytic asym. carbon-carbon bond formation reactions such as alkylation at allylic position (Pd or Ni), carbonylation (Pd, Co, etc.), cyclopropanation (Cu or Rh), 1,4-addition reaction (Cu, Rh), Heck reaction (Pd), cross-coupling reactions (Pd, Ni) using complexes of transition metals in later period, in particular ring-closure metathesis or asym. 1,4-addition reaction using Schrock-type Mo catalysts. Also described is rhodium-catalyzed asym. 1,4-addition reaction of aryl or alkenylboronic acids to electron deficient olefins such as  $\alpha,\beta$ -unsatd. carbonyl compds.  
 ACCESSION NUMBER: 2003:767128 CAPLUS  
 DOCUMENT NUMBER: 140:390910  
 TITLE: Catalytic asymmetric carbon-carbon bond formation reaction  
 AUTHOR(S): Hayashi, Tamio  
 CORPORATE SOURCE: Graduate School of Science, Kyoto University, Japan  
 SOURCE: Sentan Kagaku Shirizu (2003), Volume 1, 106-110. Maruzen K.K.: Tokyo, Japan.  
 CODEN: 69E0SF  
 DOCUMENT TYPE: Conference; General Review  
 LANGUAGE: Japanese

L38 ANSWER 28 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Controlled pore structure catalysts that are active for catalyzing the partial oxidation of methane to CO and H<sub>2</sub> and which are capable of initiating the reaction at  $\leq 300^\circ$  without an addnl. ignition source consist of a catalytic component and a porous support having an initial BET surface area of 2-10 m<sup>2</sup>/g, a pore volume of 0.01-0.6 cm<sup>3</sup>/g, and an average pore size of 10-150 nm in diameter. The catalytic component can be Rh, Pt, Ir, Ru, Ni, Pd, or their combinations. The catalyst can contain a promoter, such as Mg, Ca, Ba, Sr, Li, Na, or K. The catalytic component can be a metal alloy containing at least two of the following metals: Rh, Pt, Ir, Ru, Pd, Co, Fe, Ni, Cu, or Zn. The metal alloy contains Co or Ni. Preferably, the catalyst contains 0.5-10 weight% of Rh and 0.5-10 weight% of Sm. The porous support can consist of zirconia, Mg, Y, or Ca-stabilized zirconia, alumina, zirconia-stabilized alumina, Mg-modified alumina, cordierite, titania, silica, magnesia, niobia, ceria, vanadia, or silicon carbide.  
 ACCESSION NUMBER: 2003:757618 CAPLUS  
 DOCUMENT NUMBER: 139:247848  
 TITLE: Production of synthesis gas by partial oxidation of methane using a controlled-pore structure catalyst  
 INVENTOR(S): Nihi, Tsanyan; Wang, Daxiang; Minahan, David M.; Wright, Harold A.; Straguzzi, Gloria I.  
 PATENT ASSIGNEE(S): Conoco Inc., USA  
 SOURCE: PCT Int. Appl., 55 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003078309	A1	20030925	WO 2002-US37029	20021119
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003180215	A1	20030925	US 2002-299879	20021119
PRIORITY APPLN. INFO.:			US 2002-364204P	P 20020313

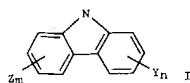
REFERENCE COUNT: 4  
 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 29 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Hydrogen is produced via condensed-phase reforming by reacting water and a water-soluble oxygenated hydrocarbon in the presence of a metal-containing catalyst at  $< 300^\circ\text{C}$  and a pressure at which the water and the hydrocarbon remain condensed liqs. The catalyst contains a group VIII transition metal, such as Ni, Pd, Pt, Ru, Rh, and Ir, and it is mixed or alloyed with a group IB, IIB, VIIB, IVA, or VA metal, especially Cu, Zn, Ge, Sn, and Bi. The catalyst is supported on silica, alumina, zirconia, titania, ceria, carbon nanotubes, carbon fullerenes, silica-alumina, zeolites, silicon nitride, or boron nitride. The silica is modified with silanes, alkali or alkaline earth compds., especially with trimethylethoxysilane.  
 The hydrocarbon is reacted in the presence of an alkali or alkaline earth metal hydroxide, carbonate, nitrate, or chloride. The oxygenated hydrocarbon can be methanol, ethanediol, ethanedione, glycerol, glyceraldehyde, aldotetroses, aldopentoses, aldohexoses, ketotetroses, ketopentoses, ketohexoses, and alditols, especially glucose, xylose, xylitol, sorbitol, or sucrose.  
 ACCESSION NUMBER: 2003:717487 CAPLUS  
 DOCUMENT NUMBER: 139:216903  
 TITLE: Low-temperature hydrogen production from oxygenated hydrocarbons  
 INVENTOR(S): Cortright, Randy D.; Dumesic, James A.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 39 pp., Cont.-in-part of U.S. Ser. No. 998,552.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003170171	A1	20030911	US 2002-306258	20021127
US 2003095953	A1	20030529	US 2001-998552	20011129
US 6699457	B2	20040302		
PRIORITY APPLN. INFO.:			US 2001-998552	A2 20011129

L38 ANSWER 30 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Deep desulfurization of hydrocarbon fuels (especially gasoline, diesel fuel, jet fuel, and petroleum middle distillates) is carried out by passage of the fuel over an adsorbent selected from transition metal chlorides, activated Ni adsorbent, metal ion-exchanged zeolites, Ni-Zn-Al-modified layered double hydroxides, Ni and regenerated Ni silica-alumina, sulfided Co-Mo/Al<sub>2</sub>O<sub>3</sub> (e.g., as a regenerated hydrosulfurization catalyst), and regenerated sulfided metal. Suitable transition metal chlorides have a mol. formula of AZBC<sub>4</sub> or XZC<sub>4</sub>, in which A = K, Na, and H; B is a transition metal (selected from Pd, Ni, Cu, Co, Al, and Sn); X is a transition metal (selected from Mn, Ni, Co, Fe, Ce, and Ru); and Z is a noble metal (selected from Pd or Pt). Suitable supports are selected from MCM-41 zeolites, aluminosilicates, sieves, silica gel, alumina, activated carbon, and zeolites. Desulfurization-adsorption is carried out at 10-340° and at ambient or elevated pressure.  
 ACCESSION NUMBER: 2003:656961 CAPLUS  
 DOCUMENT NUMBER: 139:182705  
 TITLE: Transition metal-based adsorbents for deep desulfurization of gasoline, naphtha, and middle distillate fuels  
 INVENTOR(S): Song, Chunshan; Ma, Xiaoliang; Sprague, Michael J.; Subramani, Velu  
 PATENT ASSIGNEE(S): The Penn State Research Foundation, USA  
 SOURCE: PCT Int. Appl., 71 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003068892	A2	20030821	WO 2003-US4349	20030211
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004007506	A1	20040115	US 2003-365574	20030211
PRIORITY APPLN. INFO.:			US 2002-357564P	P 20020212



AB Carbazoles I [R = (un)substituted aryl, alkyl; Y, Z = OMe, ester, nitrile, amino, halo, nitro, O-containing aryl; n, m = 1-4], useful as electroluminescent materials, fluorescent materials, etc., are prepared by reaction of RNN2 (R = same as I) with corresponding 2,2'-halo- and/or F3CSO3-substituted 1,1'-biphenyls in organic solvents in the presence of (A) MLn (M = Pd, Ni; L = bulky organophosphorus ligand; n = integer) and hydrogen halide acceptors chosen from alkali metal tert-butoxides, alkali metal carbonates, acetates, or phosphates, and organic amines or (B) Cu iodide, bulky diamine ligands, and the hydrogen halide acceptors. PhNH2 was cyclocondensed with 2,2'-dibromo-1,1'-biphenyl in PhMe in the presence of Pd2(dba)3 (dba = trans,trans-dibenzylideneacetone), (tert-Bu)3P, and tert-BuONa at 80° for 24 h to give 86% 9-phenylcarbazole.

ACCESSION NUMBER: 2003:585200 CAPLUS  
DOCUMENT NUMBER: 139:133468  
TITLE: Preparation of carbazoles from amines and biphenyls  
INVENTOR(S): Tamao, Kyoko  
PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKKXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003212850	A2	20030730	JP 2002-16010	20020124
PRIORITY APPLN. INFO.:			JP 2002-16010	20020124

OTHER SOURCE(S): MARPAT 139:133468

L38 ANSWER 32 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The invention relates to a method of preparation of aromatic amines (unsubstituted or N-methyl-substituted), useful in the production of dyes, drugs, antioxidants, and antidetonating additives to fuel. The method for preparation of aromatic amines involves a reduction of the corresponding nitro-analogs with methanol in the vapor phase at elevated temperature in the presence of industrial copper-containing catalyst (for example, type Virgon, or S 40, or NTK 10-7F modified with nickel or palladium, or platinum and taken in the amount 0.3-10 weight%). The process is carried out at temperature 200-260 °C, under atmospheric pressure and the feeding rate of the parent liquid mixture of methanol with aromatic nitro-compound from 0.5 to 2.5 t-1, and maintaining the ratio of methanol/aromatic nitro-compound in the parent mixture from 1:1 to 5:1. The proposed method ensures enhancement of the total yield of aromatic amines up to 99.5%, output by product up to 0.4-1.3 g/g x h, and increased safety of the process due to exclusion of hydrogen. Depending on the ratio of the reagents used, the method allows alteration of the ratios of the synthesized N-methyl-substituted and unsubstituted aromatic amines. For instance, 3-methoxyaniline (93-94%) and N-methyl-3-methoxyaniline (2.3-3%) were prepared (example 7) via Ni/Virgon-catalyzed reduction of 3-methoxynitrobenzene (the catalyst was prepared in example 4).

ACCESSION NUMBER: 2003:538282 CAPLUS  
DOCUMENT NUMBER: 140:303390  
TITLE: A method of preparation of aromatic amines via catalytic reduction of corresponding nitro-analogs with methanol  
INVENTOR(S): Vinokurov, V. A.; Stytsenko, V. D.; Potapenko, S. A.; Stryuchkov, A. V.; Lipina, S. V.  
PATENT ASSIGNEE(S): Rossiiskii Gosudarstvennyi Universitet Nefti i Gaza im. I. M. Gubkina, Russia; Innovatsionnyi Fond "Neft-Gaz-Nauka"  
SOURCE: Russ., No pp. given  
CODEN: RUXXE7  
DOCUMENT TYPE: Patent  
LANGUAGE: Russian  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2207335	C2	20030627	RU 2001-111547	20010428
PRIORITY APPLN. INFO.:			RU 2001-111547	20010428

L38 ANSWER 33 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Said method is characterized in that it consists in passing a gas mixture free of mol. oxygen and comprising propane, water vapor, as well as, optionally, an inert gas, over a catalyst containing molybdenum, vanadium, tellurium, oxygen and at least 1 other element X selected among niobium, tantalum, tungsten, titanium, aluminum, zirconium, chromium, manganese, iron, ruthenium, cobalt, rhodium, nickel, palladium, platinum, antimony, bismuth, boron, indium and cerium, and on a cocatalyst of formula: Mo1BiaPebCocNidKeshTlgtSihCaINbJTeKPlWmCu nox (a = 0.006-1, b, c, d, h = 0-3.5, e, f, g, j, k, l, m, n = 0-1, x depends on the oxidation state of the other elements) so that the mixed metal oxides is reduced. Using this catalyst decreases the amount of propionic acid byproduct.

ACCESSION NUMBER: 2003:434506 CAPLUS  
DOCUMENT NUMBER: 139:7361  
TITLE: Method for producing acrylic acid from propane in the absence of molecular oxygen  
INVENTOR(S): Dubois, Jean-Luc; Serreau, Stephanie; Jacquiel, Julien  
PATENT ASSIGNEE(S): ATOFINA, Fr.  
SOURCE: PCT Int. Appl., 26 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003045886	A2	20030605	WO 2002-FR4089	20021128
WO 2003045886	A3	20040212		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
FR 2833005	A1	20030606	FR 2001-15524	20011130
FR 2833005	B1	20040123		
PRIORITY APPLN. INFO.:			FR 2001-15524	A 20011130

L38 ANSWER 34 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A silica-supported chitosan-palladium complex SiO2-CS-PdCl2 has good activity and selectivity of the catalyst have been achieved by the synergic effect of Pd-Ni bimetallic system and the effect of polymer protection. The reuse of the catalyst was also studied.

ACCESSION NUMBER: 2003:382026 CAPLUS  
DOCUMENT NUMBER: 139:166148  
TITLE: Natural biopolymer-supported bimetallic catalyst for reductive carbonylation of nitrobenzene  
AUTHOR(S): Zhang, Jun; Xia, Chun-qu  
CORPORATE SOURCE: Lanzhou Institute of Chemical Physics, Chinese Academy of Science, Lanzhou, 730000, Peop. Rep. China  
SOURCE: Fenzi Cuihua (2003), 17(2), 101-105  
CODEN: FECUEN; ISSN: 1001-3555  
PUBLISHER: Kexue Chubanshe  
DOCUMENT TYPE: Journal  
LANGUAGE: Chinese  
OTHER SOURCE(S): CASREACT 139:166148

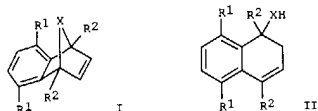
L38 ANSWER 35 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Metal nanoparticles having size of 1.0-30 nm and sp. surface  $\leq$  300 m<sup>2</sup>/g uniformly dispersed in a liquid were used as **catalysts** for liquid-phase oxidation, epoxidn. of olefins by peroxides (ex. epoxidn. of propylene and 1-nonene with ethylbenzene hydroperoxide), and hydrogenation of aromatic compds. The metal nanoparticles were prepared in a reactor made as a high-frequency generator with glow discharge between electrodes and metal particles, the nanoparticles being formed in a liquid medium used in the subsequent oxidation processes as a solvent and/or a reactant. The concentration (0.01-5.0 g/L) and size of the metal nanoparticles was found to depend on the production conditions and nature of the metal used. The metal nanoparticles (Ni, Pd, Pt, Co, Fe) were applied on the surface of different inorg. supports, such as silica, aluminum oxide, magnesium oxide and kieselguhr, with the active metal content within 0.01-10%.

ACCESSION NUMBER: 2003:369592 CAPLUS  
 DOCUMENT NUMBER: 140:113175  
 TITLE: New highly efficient **catalysts** for liquid-phase oxidation  
 AUTHOR(S): Artemov, A. V.  
 CORPORATE SOURCE: Mosk. Gos. Univ. Dizaina Tekhnol., Moscow, Russia  
 SOURCE: Kataliz v Promyshlennosti (2001), (2), 18-23  
 CODEN: KPARAU  
 ZAO "Kalvis"  
 PUBLISHER: Journal  
 DOCUMENT TYPE: Russian  
 LANGUAGE: Russian

L38 ANSWER 36 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Membrane processes were studied to recover process water and Au from washing water of electroless PCB plating processes. The filtration expts. were carried out using not only a RO membrane test cell to determine suitable membrane for washing water but also spiral wound membrane modules of nanofiltration and reverse osmosis for scale-up. RO-TL (tap water, low pressure), RO-BL (brackish water, low pressure) and RO-normal (water purifier) sheet membranes made by Saeahan Co. were tested, and the performance of RO-TL membrane showed most suitable for recovery of soft etching, **catalyst** and Ni washing waters. As a result of RO test cell, the expts. for scale-up were carried out using RO-TL modules for water purifier at 7 bar and 25'. The permeate flux for Au washing water was approx. 30 LMH, but Au rejection was <80%. The permeate fluxes for Pd, Ni and soft etching washing water were about 22, 17 and 10 LMH, resp. The Pd, Ni and Cu rejections showed more than 85, 97 and 98%, resp. The nanofiltration module for water purifier was introduced to recover Au selectively from Au, Ni and Cu ions in Au washing water. Most of Ni and Cu ions in the feed washing water were removed, and only Au ion was existed 81.9% in the permeate. Au ion in the permeate was concentrated and recovered by RO-TL membrane module. Au was also able to recover effectively using 4 in. diameter spiral wound modules of NF and RO-TL membranes, in series.

ACCESSION NUMBER: 2003:323024 CAPLUS  
 DOCUMENT NUMBER: 139:89603  
 TITLE: Wastewater recycling from electroless printed circuit board plating process using membranes  
 AUTHOR(S): Lee, Dong Hoon; Kim, Lee Hyun; Chung, Kun Yong  
 CORPORATE SOURCE: Department of Chemical Engineering, Seoul National University of Technology, Seoul, 139-743, S. Korea  
 SOURCE: Membrane (2003), 13(1), 9-19  
 CODEN: MEMBEP; ISSN: 1226-0088  
 PUBLISHER: Membrane Society of Korea  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Korean

L38 ANSWER 37 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



AB Pd(BINAP)Cl<sub>2</sub> or Ni(BINAP)I<sub>2</sub>-catalyzed asym. reductive ring opening of oxazabenzonorbornadienes I (X = O, MeO<sub>2</sub>CN, 4-MeC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>N; R<sub>1</sub>, R<sub>2</sub> = H, Me) with organic acids and zinc powder under mild conditions afforded the corresponding 1,2-dihydronaphthyl alcs. or amines II in good to excellent yields with high enantioselectivity.

ACCESSION NUMBER: 2003:292369 CAPLUS  
 DOCUMENT NUMBER: 139:36289  
 TITLE: Asymmetric Reductive Ring-Opening of Bicyclic Olefins Catalyzed by Palladium and Nickel Complexes  
 AUTHOR(S): Li, Lih-Ping; Rayabarapu, Dinesh Kumar; Nandi, Malay; Cheng, Chien-Hong  
 CORPORATE SOURCE: Department of Chemistry, Tsing Hua University, Hsinchu, 300, Taiwan  
 SOURCE: Organic Letters (2003), 5(10), 1621-1624  
 CODEN: ORLEF7; ISSN: 1523-7060  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 139:36289  
 REFERENCE COUNT: 49  
 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT

L38 ANSWER 38 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Hydrodewaxing of medium and heavy petroleum feedstocks, especially for production of dewaxed diesel fuel and lubricating base oils, is carried out at 200-500° and 10-150 atmospheric in the presence of a composite **catalyst** containing a metallosilicate zeolite with an oxide mole ratio of 0.0.4:30-300:0-10 X<sub>2</sub>O-M<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O, in which X = Na, Pt, Pd, Na, or Zn and; M = Fe or La. A zeolite was prepared from Na<sub>2</sub>SiO<sub>3</sub>, tetrapropylammonium bromide (template), and Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, to produce a ferrisilicate zeolite **catalyst** that could be ion-exchanged with NH<sub>4</sub><sup>+</sup>, Pt<sup>2+</sup>, or Ni<sup>2+</sup>. Optionally, the ferrisilicate can be surface-passivated by controlled deposition of SiO<sub>2</sub> (e.g., by treatment with bis(trimethylsilyl)amine). Typical feedstocks to be used with these **catalysts** include middle distillates, gas oils, and bright stock raffinates.

ACCESSION NUMBER: 2003:270041 CAPLUS  
 DOCUMENT NUMBER: 138:257661  
 TITLE: Metallosilicate zeolite **catalysts** for hydrodewaxing of medium and heavy petroleum feedstocks  
 INVENTOR(S): for manufacture of dewaxed oils and diesel fuel  
 Sivasanker, Subramanian; Reddy, Kondom Madhusudan; Waghmare, Kashinath Joti; Ratnasamy, Paul  
 PATENT ASSIGNEE(S): Council of Scientific and Industrial Research, India  
 SOURCE: Indian, 24 pp.  
 CODEN: INXXAP  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
IN 175147	A	19950506	IN 1989-DE904	19891006
PRIORITY APPL. INFO.:			IN 1989-DE904	19891006

L38 ANSWER 39 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 38 refs. covering temperature-programmed reduction (TPR) studies on Ni/Al<sub>2</sub>O<sub>3</sub>, TPO (oxidation) studies on carbonization in Ni/SiO<sub>2</sub>, Ni/TiO<sub>2</sub>, and Ni/MgO systems, TPR and XRD studies on NiLa<sub>2</sub>O<sub>4</sub>, on reducibility of Co(O)/MgO, /CaO, /SrO or /BAO, on Rh catalysts supported on reducible (CeO<sub>2</sub>, Nb<sub>2</sub>O<sub>5</sub>, Ta<sub>2</sub>O<sub>5</sub>, ZrO<sub>2</sub>) and nonreducible (γ-Al<sub>2</sub>O<sub>3</sub>, La<sub>2</sub>O<sub>3</sub>, MgO, SiO<sub>2</sub>, Y<sub>2</sub>O<sub>3</sub>) oxides, and bimetal catalysts (Rh-Cu, Ni-Mo, Ni-Rh, Ni-Pt, Ni-Ru, Ni-Pd, Ni-Mn) supported on SiO<sub>2</sub>, La<sub>2</sub>O<sub>3</sub> or Al<sub>2</sub>O<sub>3</sub>.  
 ACCESSION NUMBER: 2003:258908 CAPLUS  
 DOCUMENT NUMBER: 138:23775  
 TITLE: Temperature-programmed techniques in studies of the catalysts used to reform methane with carbon dioxide  
 AUTHOR(S): Rynkowski, Jacek; Lewicki, Andrzej  
 CORPORATE SOURCE: Inst. Chem. Ogólnej i Ekol., Politech. Lodzka, Lodz, 90-924, Pol.  
 SOURCE: Przemysł Chemiczny (2003), 82(3), 187-192  
 CODEN: PRCHAB; ISSN: 0033-2496  
 PUBLISHER: Wydawnictwo SIGMA-NOT  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Polish

L38 ANSWER 40 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Six zero valent bimetal combinations were tested for TCE dechlorination. Pd, Ni, and Cu were coated at ≤500 mg/Kg onto zero valent Fe, producing Pd/Fe, Ni/Fe, and Cu/Fe bimetal, and Zn, producing Pd/Zn, Ni/Zn, and Cu/Zn bimetal. The order of reactivity of the 6 bimetal and 2 metals based on surface area normalized pseudo 1st order rate const. was: Pd/Fe > Pd/Zn > Ni/Fe > Cu/Fe > Ni/Zn > Cu/Zn > Fe > Zn. Thus, in general, (1) Fe metal and bimetal exhibit faster reaction rates than the corresponding Zn reductants, (2) bimetal exhibit faster reaction rates than pure metals, and (3) metal coating enhance reactivity in the order Pd > Ni > Cu. Chlorinated intermediate products were observed in small amts. for Fe only. In all cases, the chloride balance, calculated from TCE and chloride concns., were 90-111%. The results are discussed in terms of the effects of bimetal combinations on catalytic dechlorination, prevention of nonreactive film and metal corrosion.  
 ACCESSION NUMBER: 2003:247045 CAPLUS  
 DOCUMENT NUMBER: 138:390031  
 TITLE: Reductive dechlorination of TCE by zero valent bimetal  
 AUTHOR(S): Kim, Y.-H.; Carraway, E. R.  
 CORPORATE SOURCE: Department of Environmental Toxicology, Clemson Institute of Environmental Toxicology, Clemson University, Pendleton, SC, 29670-0709, USA  
 SOURCE: Environmental Technology (2003), 24(1), 69-75  
 CODEN: ENVTET; ISSN: 0959-3330  
 PUBLISHER: Selper Ltd., Publications Division  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 41 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The invention relates to the manufacture of nitriles from unsatd. organic compds. by reaction with HCN. In particular, it relates to manufacture of nitriles used in the synthesis of adiponitrile, an important chemical intermediate for the manufacture of, e.g., hexamethylenediamine and ε-caprolactam. The process provides compds. containing ≥1 nitrile function by hydrocyanation, with HCN, of an organic compound containing ≥1 ethylenic unsatd. The reaction takes place in the presence of a catalytic system comprising nickel, platinum, or palladium, and an organophosphorus ligand, using an ionic liquid reaction medium. A Lewis acid cocatalyst, functioning as an isomerization catalyst for unsatd. nitriles, may also be present. This cocatalyst provides for isomerization of undesired branched unsatd. nitriles to give preferred linear isomers, which undergo hydrocyanation to give adiponitrile. The anion of the ionic solvent may also function as a Lewis acid. For instance, the ionic liquid 1-butyl-2,3-dimethylimidazolium bis(trifluoromethylsulfonyl)amide (I) was prepared in 90% yield from the corresponding imidazolium chloride and lithium amide salts in water at room temperature. I and 2 other imidazolium salts were prepared and tested as solvents and isomerization catalysts in a representative hydrocyanation reaction mixture. Thus, a mixture of unsatd. C<sub>5</sub> nitriles containing 79% 2-methyl-3-butenenitrile (II) was subjected to isomerization in a solution of I and heptane in the presence of Ni(COD)<sub>2</sub> (hydrocyanation catalyst) and 3-(Ph<sub>2</sub>P)C<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>Na (ligand) at 100° for 3 h. The isomerization reaction gave 96% conversion of II, with a 94% yield of the desired linear isomers 3-pentenitrile (III) and 4-pentenitrile, with only 2.4% yield of undesired isomers. In a hydrocyanation reaction of III using the same catalyst and ligand, I as solvent, Me<sub>2</sub>C(OH)CN as the source of HCN, and added ZnCl<sub>2</sub> as an addnl. Lewis acid, desired dinitrile products (including adiponitrile) were obtained in 16.0% yield with 25.9% conversion of III.  
 ACCESSION NUMBER: 2003:223752 CAPLUS  
 DOCUMENT NUMBER: 138:254847  
 TITLE: Process for manufacture of nitrile and dinitrile compounds by reaction of alkenes or unsaturated nitriles with hydrogen cyanide in ionic liquid solvents and application to the production of adiponitrile  
 INVENTOR(S): Basset, Jean Marie; Chauvin, Yves; Galland, Jean Christophe  
 PATENT ASSIGNEE(S): Rhodia Polyamide Intermediates, Fr.  
 SOURCE: Fr. Demande, 22 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:  
 PATENT NO. KIND DATE APPLICATION NO. DATE  
 FR 2829763 A1 20030321 FR 2001-12040 20010918

L38 ANSWER 41 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 WO 2003024919 A1 20030327 WO 2002-FR3166 20020917  
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, SZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GN, GQ, GW, MD, MR, NE, SN, TD, TG  
 EP 1427695 A1 20040616 EP 2002-779637 20020917  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK  
 PRIORITY APPLN. INFO.: FR 2001-12040 A 20010918  
 WO 2002-FR3166 W 20020917  
 OTHER SOURCE(S): CASREACT 138:254847  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
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L38 ANSWER 42 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Pd-catalyzed cross-coupling reaction of a chiral ferrocenylzinc reagent with aryl bromides allowed the introduction of a planar chiral ferrocenyl subunit on an aryl fragment. E.g., acetal (2S,4S)-I (Cp = cyclopentadienyl) undergoes ortholithiation with t-BuLi/EL20; transmetalation with ZnCl<sub>2</sub>/THF; coupling with 1,3,5-Br<sub>3</sub>C<sub>6</sub>H<sub>3</sub> in presence of PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub> and acid-catalyzed deprotection with PTSA/CH<sub>2</sub>Cl<sub>2</sub>/H<sub>2</sub>O (PTSA = p-toluenesulfonic acid) to give (R,R,R)-II in 59% yield. Using this method, new C<sub>3</sub> sym. chiral architecture bearing organometallic donor-acceptor fragments, e.g., III [R = C(CN):C(CN)C], were assembled starting from a common tris aldehyde precursor (II). The nonlinear optical properties were measured using the Harmonic Light Scattering method and the potentiality for the new chromophores III to behave as octupoles is also discussed.

ACCESSION NUMBER: 2003:1211988 CAPLUS  
DOCUMENT NUMBER: 139:149713  
TITLE: Palladium-catalyzed cross-coupling reaction of a chiral ferrocenyl zinc reagent with aromatic bromides: Application to the design of chiral octupoles for second harmonic generation

AUTHOR(S): Mamane, Victor; Ledoux-Rak, Isabelle; Deveau, Sandrine; Zyss, Joseph; Riant, Olivier  
CORPORATE SOURCE: Laboratoire de Catalyse Moléculaire, ICMO, Université Paris-Sud, Orsay, 91405, Fr.  
SOURCE: Synthesis (2003), (3), 455-467  
CODEN: SYNTBF; ISSN: 0039-7881  
PUBLISHER: Georg Thieme Verlag  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 139:149713  
REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS  
FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 43 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The invention refers to a **catalyst** film comprising a microporous membrane filter, a porous ceramic film containing one or two of Pt, Ru, Pd, Ni, Cu, Co, Rh or Ag, and a porous substrate in order to use both filtering and catalytic activity to remove carbon monoxide in fuel cells.

ACCESSION NUMBER: 2003:187960 CAPLUS  
DOCUMENT NUMBER: 138:227465  
TITLE: Catalyst film and production method and selective removal of carbon monoxide in fuel cells using said catalyst membrane

INVENTOR(S): Kusakabe, Katsumi; Hasegawa, Yasuhisa  
PATENT ASSIGNEE(S): Sangaku Rentai Kiko Kyushu K. K., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003071287	A2	20030311	JP 2001-265311	20010903
PRIORITY APPLN. INFO.:			JP 2001-265311	20010903

L38 ANSWER 44 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The title supported **catalyst** composition comprises: at least one metal selected from **nickel**, **palladium**, **platinum**, **copper**, **silver**, gold, cobalt, rhodium, and iridium; and at least one metal selected from lithium, sodium, potassium, rubidium, cesium, beryllium, magnesium, calcium, strontium, and barium. The title **catalyst** composition comprises 21s lithium, sodium, potassium, rubidium, cesium, beryllium, magnesium, calcium, strontium, barium, or a mixture of at least two them, based on the weight of the supported **catalyst** composition. These **catalysts** demonstrate use in the hydrogenation of nitriles (e.g., acetonitrile) into amines (e.g., ethylamine).

ACCESSION NUMBER: 2003:172959 CAPLUS  
DOCUMENT NUMBER: 138:206866  
TITLE: Preparation of supported **catalyst** compositions for the hydrogenation of nitriles into primary amines

INVENTOR(S): Van den Brink, Peter John  
PATENT ASSIGNEE(S): Avantium International B.V., Neth.  
SOURCE: Eur. Pat. Appl., 10 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1288188	A1	20030305	EP 2001-203244	20010828
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
WO 2003018532	A1	20030306	WO 2002-EP9823	20020828
WO 2003018532	B1	20031120		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			EP 2001-203244	A 20010828
			US 2001-315037P	P 20010828
			EP 2002-77750	A 20020709

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS  
FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 45 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB This invention pertains to prep method of 4-(cyanomethyl)-2,3'-difluoro-4'-(trifluoromethyl)biphenyl by coupling reaction catalyzed by Pd or Ni **catalyst**. For example, 4-bromo-2-fluoro-1-trifluoromethylbenzene was treated with n-BuLi in Et<sub>2</sub>O and hexane, followed by the addition of ZnCl<sub>2</sub> to produce the organic **zinc** compound solution. The above **zinc** compound was coupled with 1-bromo-4-(cyanomethyl)-2-fluorobenzene in THF in the presence of [1,1'-bis(diphenylphosphino)ferrocene]palladium(II) dichloride to afford the title compound (86%). The title compound is expected to be useful as electronic luminescence display material, and as an intermediate of medical and agricultural chems. (no data).

ACCESSION NUMBER: 2003:150136 CAPLUS  
DOCUMENT NUMBER: 138:204823  
TITLE: Process for preparation of 4-(cyanomethyl)-2,3'-difluoro-4'-(trifluoromethyl)biphenyl

INVENTOR(S): Guan, Yuen; Takechi, Naoto; Shimoda, Mitsuharu; Fukai, Yasushi; Nakaya, Tadao; Ishitobi, Tatsuo; Noguchi, Yukinori; Tajima, Akio  
PATENT ASSIGNEE(S): Kanto Denka Kogyo Co., Ltd., Japan; Taiho Kogyo Co., Ltd.  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003055331	A2	20030226	JP 2001-245310	20010813
PRIORITY APPLN. INFO.:			JP 2001-245310	20010813

L38 ANSWER 46 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The chiral derivative is that represented as C<sub>2</sub>ArC<sub>2</sub> (I; C<sub>2</sub> = N-carbazolyl) which may be substituted with electron-donating groups; Ar = arylene having bond axis showing or allowing internal rotational isomerization, which may be substituted with electron-withdrawing groups). The derivative is manufactured from NH<sub>2</sub>ArNH<sub>2</sub> (Ar is the same as I) and 2,2'-dihalo-1,1'-biphenyl, 2-halo-2'-trifluoromethanesulfonyloxy-1,1'-biphenyl, or 2,2'-bis(trifluoromethanesulfonyloxy)-1,1'-biphenyl in the presence of a combination of M<sub>2</sub> (M = Pd, Ni; L = bulky organic P compound ligand) and a hydrogen halide-accepting salt, e.g., tert-butoxy alkali metal, alkali metal carbonate, etc., or a combination of Cu iodide, a bulky diamine ligand, and the hydrogen halide-accepting salt in an organic solvent. A material containing I for electroluminescent devices, which is for forming a light-emitting layer and buffer layer for reduction of driving voltage or enhancement of light emission efficiency, is also claimed.

ACCESSION NUMBER: 2003:110882 CAPLUS  
 DOCUMENT NUMBER: 138:144883  
 TITLE: Dicarbazole derivative connected with chiral arylene showing electroluminescence and manufacture of the derivative  
 INVENTOR(S): Tamao, Kyoko  
 PATENT ASSIGNEE(S): Japan Science and Technology Corporation, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 Patent  
 DOCUMENT TYPE: Japanese  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003040867	A2	20030213	JP 2001-222773	20010724
PRIORITY APPLN. INFO.:			JP 2001-222773	20010724

OTHER SOURCE(S): MARPAT 138:144883

L38 ANSWER 47 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title apparatus includes needle-shaped 1st electrode(s), a flat-shaped 2nd electrode approx. perpendicular to and oppositely arranged toward the 1st electrode(s), an elec. discharge voltage applied across the 1st and 2nd electrodes, the 1st and 2nd electrodes are arranged in a space where flows a fluid to be treated, and streamer discharge is generated between both electrodes for treating the fluid to be treated. The tip(s) of the 1st electrode(s) is arranged toward the 2nd electrode, and the tip angle (θ) is 30-90°, preferably 60-90°. A treating component is arranged between the 1st and 2nd electrodes, or arranged at their downstream side. The treating component may have catalysts, e.g., Pt, Pd, Ni, Ir, Rh, Co, Os, Ru, Fe, Re, Te, Mn, Au, Ag, Cu, W, Mo and/or Cr. The above stated catalysts may also be metal oxides, e.g., Mn oxide, Fe oxide, Ce oxide, Eu oxide, La oxide, Cu oxide, and their mixts. or composite oxides. The air purification apparatus includes the above stated plasma reactor, a casing for accommodating the plasma reactor, and a means for introducing air into the plasma reactor for removal odorous and harmful substances from air.

ACCESSION NUMBER: 2003:108137 CAPLUS  
 DOCUMENT NUMBER: 138:155486  
 TITLE: Plasma reactor and air purification apparatus.  
 INVENTOR(S): Tanaka, Toshio; Motegi, Kanji; Kagawa, Kenichi; Okubo, Toshikazu  
 PATENT ASSIGNEE(S): Daikin Industries, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 Patent  
 DOCUMENT TYPE: Japanese  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003038932	A2	20030212	JP 2002-30876	20020207
PRIORITY APPLN. INFO.:			JP 2001-150615	A 20010521

L38 ANSWER 48 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Fluorinated tricyclo[4.2.1.0<sup>2,5</sup>]non-7-ene-3-carboxylic acid esters are shown to undergo metal-catalyzed addition polymerization. The resulting homopolymers are transparent at 157 nm and demonstrate the utility of these monomers in development of photoresists for 157 nm lithog. Fluorinated tricyclononene (TCN) structures with ester substituents exhibit up to 3 orders of magnitude more transparency at 157 nm than conventional ester-functionalized norbornene structures as determined by gas-phase vacuum-UV spectroscopy and variable angle spectroscopic ellipsometry. Unlike their fluorinated norbornene counterparts, the fluorinated, ester-functionalized TCN monomers successfully undergo transition-metal-catalyzed addition polymerization to produce polymers with high glass transition temps. and the etch resistance required for photolithog. resist materials applications. The potential use of fluorinated TCN structures for 157 nm photoresists is demonstrated through the synthesis and characterization of TCN monomers and polymers.

ACCESSION NUMBER: 2003:102816 CAPLUS  
 DOCUMENT NUMBER: 138:288064  
 TITLE: Metal-catalyzed addition polymers for 157 nm resist applications. Synthesis and polymerization of partially fluorinated, ester-functionalized tricyclo[4.2.1.0<sup>2,5</sup>]non-7-ene-3-carboxylic acid esters  
 AUTHOR(S): Sanders, Daniel P.; Connor, Eric F.; Grubbs, Robert H.; Hung, Raymond J.; Osborn, Brian P.; Chiba, Takashi; MacDonald, Scott A.; Willson, C. Grant; Conley, Will  
 CORPORATE SOURCE: Arnold and Mabel Beckman Laboratories of Chemical Synthesis Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, 91125, USA  
 SOURCE: Macromolecules (2003), 36(5), 1534-1542  
 CODEN: MAMOBX; ISSN: 0024-9297  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 78  
 THIS THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 49 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Ar<sub>1</sub>R [Ar<sub>1</sub> = (substituted) aryl; R = (substituted) aryl, alkyl, alkenyl], were prepared by reaction of Ar<sub>1</sub>CN with R<sub>2</sub>M (R as defined above; M = Mg, Zn optionally bearing addnl. ligands; x = 1-3) in the presence of Ni or Pd catalysts having P ligands. Thus, PhMgBr was heated in a solution of LiCOMe<sub>3</sub> in THF at 60°; the solution was cooled and 4-MeOC<sub>6</sub>H<sub>4</sub>CN and (PPh<sub>3</sub>)<sub>2</sub>NiCl<sub>2</sub> were added followed by heating at 60° for 2 h to give 91% 4-phenylanisole.

ACCESSION NUMBER: 2003:77799 CAPLUS  
 DOCUMENT NUMBER: 138:122460  
 TITLE: Process for preparing unsymmetrical biaryls and alkylated aromatic compounds from aryl nitriles and Grignard reagents or organozinc compounds in the presence of nickel or palladium catalysts.  
 INVENTOR(S): Miller, Joseph A.  
 PATENT ASSIGNEE(S): DSM N.V., Neth.  
 SOURCE: Eur. Pat. Appl., 20 pp.  
 CODEN: EPXXIX  
 Patent  
 DOCUMENT TYPE: English  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1279656	A2	20030129	EP 2002-102055	20020725
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MG, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
US 2003100760	A1	20030529	US 2002-202483	20020723
PRIORITY APPLN. INFO.:			US 2001-308003P	P 20010725

OTHER SOURCE(S): CASREACT 138:122460; MARPAT 138:122460

L38 ANSWER 50 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The two nitro-olefins, (Z)-1-(3-nitrophenyl)-4-phenylbut-1-ene and (Z)-1-(3-nitrophenyl)-5-phenylpent-1-ene, were stereospecifically prepared by Pd(0)-catalyzed cross-coupling reaction between (Z)- $\beta$ -bromo-3-nitrostyrene and 2-phenylethyl- or 3-phenylpropyl zinc chloride, resp in up to 60% yield. Only Pd-complexes displayed a satisfactory catalytic activity, the presence of the nitro group destroying that of related Ni-derivs.

ACCESSION NUMBER: 2003:49015 CAPLUS  
 DOCUMENT NUMBER: 138:401442  
 TITLE: Preparation of (Z)-1-(3-nitrophenyl)-4-phenylbut-1-ene and (Z)-1-(3-nitrophenyl)-5-phenylpent-1-ene by Pd(0)-catalyzed cross-coupling reaction  
 AUTHOR(S): Del Ponte, Gino; Costa Arcanjo, Fernando; Botteggi, Carlo  
 CORPORATE SOURCE: Faculdade de Ciencias Farmaceuticas, Departamento de Ciencias Farmaceuticas, Universidade de Sao Paulo, Ribeirao Preto, 14040-903, Brazil  
 SOURCE: Journal of Molecular Catalysis A: Chemical (2003), 192(1-2), 35-40  
 CODEN: JMCQF2; ISSN: 1381-1169  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:401442  
 REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 51 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Hydrodewaxing catalysts for petroleum refinery streams are prepared by surface passivation of a crystalline metallosilicate by deposition of a silicon compound (e.g., with tetra-Me orthosilicate or an alkyl silyl amine), such that the passivated metallosilicate has the general formula 0-0.4 X2O:M2O3:30-300 SiO2:0-10 H2O (X = Na, Pt, Pd, Ni, Zn; M = Fe or La). The passivated metallosilicate is then composited with added Al2O3 and one or more added metal (catalyst) salts (e.g., Pt, Pd, Ni, or Zn), followed by shaping into the desired form. The catalysts are useful in the hydrodewaxing of atmospheric gas oils, petroleum residues (e.g., bright stocks), and middle distillates.

ACCESSION NUMBER: 2002:948932 CAPLUS  
 DOCUMENT NUMBER: 137:386842  
 TITLE: A process for the preparation of an improved catalyst composite material useful for the hydrodewaxing of petroleum oils  
 INVENTOR(S): Kotasthane, Arvind Narayan; Shiralkar, Vasudev Pandurang; Jeevan, Asha; Sivasanker, Chandwadkar Subrama; Ratanasamy, Paul  
 PATENT ASSIGNEE(S): Council of Scientific and Industrial Research, India  
 SOURCE: Indian, 23 pp.  
 CODEN: INXXAP  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
IN 174813	A	19950318	IN 1989-DE905	19891006
PRIORITY APPLN. INFO.:			IN 1989-DE905	19891006

L38 ANSWER 52 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Petroleum-derived feedstocks for manufacture of transportation fuels, especially those with diesel fuel h.p.a., are subjected to controlled selective oxidation to incorporate oxygen-containing compds. (i.e., "oxygenates") into the fuel, for example, as cetane improvers. The feedstocks are oxidized in the liquid phase in the presence of an oxidizing agent (e.g., in air, nitrogen-diluted air, or H2O2 plus a C2-6 monocarboxylic acid) and a heterogeneous oxidation catalyst to yield a reaction product including the oxidized hydrocarbons, water of reaction, and acidic byproducts. Typically, the crude reaction product is separated from suspended catalysts and washed with: (1) aqueous NaHCO3 to remove acidic byproducts, and, optionally, (2) MeOH to remove oxidized sulfur-containing material, prior to recovery of purified transportation fuel feedstocks. The oxidation catalysts are typically active metals selected from V, Cr, Mo, W, Mn, Fe, Co, Ni, Pd, Pt, Cu, and Ag, used as metal oxides, mixed metal oxides, or basic salts of the metal oxide(s), especially 0.1-20 weight% of the active metal supported on an inert support. Prior to oxidation, the feedstock is typically hydrotreated over conventional catalysts to reduce the sulfur content.

ACCESSION NUMBER: 2002:927514 CAPLUS  
 DOCUMENT NUMBER: 138:15131  
 TITLE: Liquid-phase oxidation of transportation fuel feedstocks for in-situ manufacture of oxidized hydrocarbon fuel additives  
 INVENTOR(S): Hagen, Gary P.; Huff, George A., Jr.; Gong, William H.; Regalbuto, Monica Cristina  
 PATENT ASSIGNEE(S): BP Corporation North America, Inc., USA  
 SOURCE: PCT Int. Appl., 60 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002097006	A2	20021205	WO 2002-US1158	20020116
WO 2002097006	A3	20031016		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IL, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GN, GW, ML, MR, NE, SN, TD, TG				
US 2003010674	A1	20030116	US 2001-779286	20010208
US 6673230	B2	20040106		
EP 1373436	A2	20040102	EP 2002-756070	20020116

L38 ANSWER 52 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN (Continued)  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 US 2004104144 A1 20040603 US 2003-712949 20031113  
 PRIORITY APPLN. INFO.: US 2001-779286 A 20010208  
 WO 2002-US1158 W 20020116



L38 ANSWER 53 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Hydrogenolysis of  $\alpha$ -methylbenzyl alc. (MBA), a co-product of propylene oxide (PO) in hydrocarbon peroxide oxidation processes, was studied to develop a byproduct-free PO process. The conversion of MBA was mainly affected by the acidity of the support. Among the metals tested, Pd was most active and selective for the formation of ethylbenzene (EB). The hydrogenation of MBA exhibited type II selectivity, meaning that the selectivity to main products is controlled by reaction conditions and metals chosen. On Pd or Ni, the formation of EB is predominant while on Ru or Pt, that of 1-cyclohexylethanol (CHE) prevails. By carefully designing the catalyst and selecting the reaction condition, one could obtain a very high yield of EB with only a small amount of side products. Based on the results, a bifunctional reaction mechanism was proposed.

ACCESSION NUMBER: 2002:915903 CAPLUS  
 DOCUMENT NUMBER: 138:239654  
 TITLE: Hydrogenolysis of  $\alpha$ -methylbenzyl alcohol over bifunctional catalysts  
 AUTHOR(S): Kwak, Byong-Sung; Kim, Tae-Jin; Lee, Sang-Il  
 CORPORATE SOURCE: SK Corporation, Laboratory of Fine Chemicals, SK Corporation, Taejeon, 305-370, S. Korea  
 SOURCE: Applied Catalysis, A: General (2003), 238(1), 141-148  
 CODEN: ACAGE4; ISSN: 0926-860X  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 54 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The title apparatus comprises a honeycomb ceramic filter for separating particulate matter from intake exhaust gases at upper stream side, a 1st fixed bed of adsorbents for separating SOx from treated exhaust gases, and a 2nd fixed bed of denitration catalysts containing perovskite-type composite oxides for stripping NOx at down stream side. The perovskite-type composite oxides have a general formula of  $ABO_3$  in which the A and B are 22 metals selected from Ru, Rh, Pd, Ir, Pt, Au, Ca, Sr, Ba, Y, Ce, Nd, Eu, Gd, Tb, Dy, Ho, Er, Ti, Zr, In, and Hf. The SOx adsorbents contain mainly mixed powders of NaOH and KOH, and the surface of mixed powders is preferably coated with 21 metals of Ni, Pd, Pt, and Au. The apparatus extends the service life of denitration catalysts and prevents the soot deposit and catalyst poisoning by SOx.

ACCESSION NUMBER: 2002:914787 CAPLUS  
 DOCUMENT NUMBER: 137:368478  
 TITLE: Apparatus for diesel exhaust gas treatment  
 INVENTOR(S): Osumi, Kazuo; Naito, Isao  
 PATENT ASSIGNEE(S): Isuzu Motors, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002346385	A2	20021203	JP 2001-154075	20010523
PRIORITY APPLN. INFO.:			JP 2001-154075	20010523

L38 ANSWER 55 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Ketones were prepared by reaction of boronic acids with carboxylic acid anhydrides in the presence of a Pd, Ni, Pd, or Cu catalyst. Thus, a mixture of Pd(OAc)<sub>2</sub>, diphenylferrocenylphosphine, 3-phenylpropionic acid, benzenboronic acid, H<sub>2</sub>O, and phthalic anhydride were stirred in THF at 60° to give 83% Ph(CH<sub>2</sub>)<sub>3</sub>COPh.

ACCESSION NUMBER: 2002:888690 CAPLUS  
 DOCUMENT NUMBER: 137:369827  
 TITLE: Preparation of ketones from carboxylic acid anhydrides and boronic acids  
 INVENTOR(S): Goossen, Lukas; Ghosh, Keya  
 PATENT ASSIGNEE(S): Studiengesellschaft Kohle m.b.H., Germany  
 SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: PIXAD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002092547	A1	20021121	WO 2002-EP5067	20020508
W: AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CO, CR, CU, CZ, DM, DZ, EC, EF, GE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, NZ, OM, PH, PL, RO, SG, SI, SK, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10123909	A1	20021121	DE 2001-10123909	20010517
EP 1389176	A1	20040218	EP 2002-769473	20020508
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRIORITY APPLN. INFO.:			DE 2001-10123909	A 20010517
			WO 2002-EP5067	W 20020508

OTHER SOURCE(S): CASREACT 137:369827  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 56 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Coupling N-acylbenzotriazoles with aliphatic and benzylic organozinc reagents in the presence of zinc bromide/Pd(II) catalyst (or zinc bromide/Ni(0) catalyst) did not result in formation of the expected ketones, but instead gave the corresponding carboxylic acid esters. This reaction apparently occurs by the insertion of oxygen dissolved in the solvent into the organozinc compound

ACCESSION NUMBER: 2002:866558 CAPLUS  
 DOCUMENT NUMBER: 138:368583  
 TITLE: Unexpected reactions of organozinc reagents with N-acylbenzotriazoles  
 AUTHOR(S): Katritzky, Alan R.; Denisko, Olga V.; Fang, Yunfeng; Zhang, Lianhao; Wang, Zuoquan  
 CORPORATE SOURCE: Center for Heterocyclic Compounds, Department of Chemistry, University of Florida, Gainesville, FL, 32611-7200, USA  
 SOURCE: ARKIVOC (Gainesville, FL, United States) [online computer file] (2001), (11), 41-48  
 CODEN: AGFUAR  
 URL: <http://www.arkat-usa.org/ark/journal/Volume2/Part3/Thyagarajan/BT-309D/BT-309D.pdf>  
 PUBLISHER: Arkat USA Inc.  
 DOCUMENT TYPE: Journal; (online computer file)  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:368583  
 REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 57 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The photocatalyst thin films are made of anatase-type titanium oxide thin films having peroxy groups, formed by applying their dispersions, and carrying Cu, Ag, Pt, Pd, Ni, Co, Fe, Ru, Zn, and/or Rh at 5-500 pmol/cm<sup>2</sup>. The films inhibit elution of the transition metals in water, so that they can be used for water purification  
ACCESSION NUMBER: 2002:840990 CAPLUS  
DOCUMENT NUMBER: 137:341470  
TITLE: Photocatalyst thin films for purification of malodor substances in air or in water  
INVENTOR(S): Niina, Hideaki; Kashiwabara, Seichi  
PATENT ASSIGNEE(S): Asahi Kasei Corporation, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002320862	A2	20021105	JP 2001-129943	20010426
PRIORITY APPLN. INFO.:			JP 2001-129943	20010426

L38 ANSWER 58 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Hydrogen is produced by catalytic decomposition of a feed stream comprising water using at least one proton conducting membrane adapted to interact with the feed stream; splitting the water into hydrogen and oxygen at a predetd. temperature; and separating the hydrogen from the oxygen.  
Preferably the proton conducting membrane comprises a proton conductor and a second phase material. Preferable proton conductors suitable for use in a proton conducting membrane include a lanthanide element, a Group VIA element and a Group IA or Group IIA element such as barium, strontium, or combinations of these elements. More preferred proton conductors include yttrium. Preferable second phase materials include platinum, palladium, nickel, cobalt, chromium, manganese, vanadium, silver, gold, copper, rhodium, ruthenium, niobium, zirconium, tantalum, and combinations of these. More preferably second phase materials suitable for use in a proton conducting membrane include nickel, palladium, and combinations of these. The method for generating hydrogen is preferably performed in the range between .apprx.600° and 1,700°.  
ACCESSION NUMBER: 2002:808339 CAPLUS  
DOCUMENT NUMBER: 137:313083  
TITLE: Method of generating hydrogen by catalytic decomposition of water  
INVENTOR(S): Balachandran, Uthamalingam; Dorris, Stephen E.; Bose, Arun C.; Stiegel, Gary J.; Lee, Tae-hyun  
PATENT ASSIGNEE(S): Argonne National Laboratory, USA  
SOURCE: U.S., 13 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6468499	B1	20021022	US 2000-590460	20000609
PRIORITY APPLN. INFO.:			US 2000-590460	20000609

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

L38 ANSWER 59 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Catalyst materials having a surface comprising a composition Mx/Pty/Sub; wherein M is selected from the group of elements Fe, Co, Rh and Ir; or wherein M represents two different elements selected from the group comprising Fe, Co, Rh, Ir, Ni, Pd, Cu, Ag, Au and Sn; and wherein Sub represents a substrate material selected from Ru and Os; the resp. components being present within specific ranges, display improved properties for use in anodes for low-temperature fuel cell anodes for PEMFC fuel cells and direct methanol fuel cells.  
ACCESSION NUMBER: 2002:778579 CAPLUS  
DOCUMENT NUMBER: 137:297415  
TITLE: Anode catalyst materials for use in fuel cells  
INVENTOR(S): Norskov, Jens Kehlet; Liu, Ping  
PATENT ASSIGNEE(S): The Technical University of Denmark (DTU), Den.  
SOURCE: U.S. Pat. Appl. Publ., 9 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002146614	A1	20021010	US 2001-825841	20010405
US 6663998	B2	20031216		
WO 2002082566	A2	20021017	WO 2002-DK223	20020403
WO 2002082566	A3	20021227		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CG, CF, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRIORITY APPLN. INFO.:			US 2001-825841	A 20010405

L38 ANSWER 60 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A H<sub>2</sub>-rich gas is generated by reforming a fuel mixture consisting of mol. oxygen (air), fuel, and water in the presence of an autothermally reforming catalyst at 400-700°C. The fuel can be methane, natural gas, propane, ethanol, liquefied petroleum gas, gasoline, kerosene, and diesel. The catalyst contains a transition metal, such as Pt, Pd, Ru, Rh, Ir, Fe, Co, Ni, Cu, Ag, or Au and an oxide ion-conducting ceramic material crystallized in a fluorite structure or LaGaO<sub>3</sub>. The obtained H<sub>2</sub>-rich gas is brought into contact with a second catalyst to convert CO and H<sub>2</sub>O into CO<sub>2</sub> and H<sub>2</sub>. The second catalyst consists of a transition metal, such as Pt, Pd, Ni, Ir, Rh, Co, Cu, Ag, Au, Ru, or Fe, on ceria or ceria doped with a rare earth or alkaline earth element, such as Gd, Sm, Y, La, Pr, Mg, Ca, Sr, or Ba.  
ACCESSION NUMBER: 2002:754306 CAPLUS  
DOCUMENT NUMBER: 137:265379  
TITLE: Generation of hydrogen by fuel reforming for fuel cells  
INVENTOR(S): Ahmed, Shabbir; Krumpelt, Michael  
PATENT ASSIGNEE(S): University of Chicago, USA  
SOURCE: PCT Int. Appl., 26 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002076882	A2	20021003	WO 2002-US3690	20020207
WO 2002076882	A3	20030403		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CG, CF, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 2002174603	A1	20021128	US 2001-816694	20010323
PRIORITY APPLN. INFO.:			US 2001-816694	A 20010323

L38 ANSWER 61 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review; in this work, a short compilation is presented on heterogeneously catalyzed hydrogenations carried out in near-critical fluids. Reactions carried out in supercrit. fluids, catalyzed by supported Pd, Ni or Cu, are considered as green processes in view of their negligible impact on the environment. A number of technologies are already available for clean hydrogenations, mostly performed in carbon dioxide as a dense solvent in continuous reactors. However, propane and other lower alkane solvents can perform as well as carbon dioxide but at much lower pressures. We review their behaviors in this paper in terms of observed reaction rates, space velocities, selectivities and apparent kinetic consts. In the case of vegetable oils, data are available on the effect of pressure and reaction conditions on the selectivity toward the preferred cis-isomer during linoleic hydrogenation.

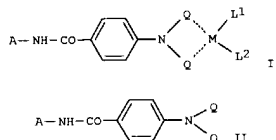
ACCESSION NUMBER: 2002:738948 CAPLUS  
 DOCUMENT NUMBER: 137:238195  
 TITLE: Short compilation of published reaction rate data for catalytic hydrogenations in supercritical fluids  
 AUTHOR(S): Ramirez, E.; Zgarbni, S.; Larrayoz, M. A.; Recasens, F.  
 CORPORATE SOURCE: Department of Chemical Engineering, ETSEIB, Universitat Politècnica de Catalunya, Diagonal 647, Barcelona, 08028, Spain  
 SOURCE: Engineering in Life Sciences (2002), 2(9), 257-264  
 Published in: Chem. Eng. Technol., 25(9)  
 CODEN: ELSNAE  
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
 DOCUMENT TYPE: Journal: General Review  
 LANGUAGE: English  
 REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 62 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Ethylene is synthesized by introducing steam into an acetylene-containing feed gas (containing 0-50% CO or 0-99% ethylene) and selectively hydrogenating in the presence of hydrogenation catalyst at 20-400° and 0.1-5.0 MPa., where the steam introduction can be done through a pump or water saturator or derived during hydrocarbon cracking or quenching. The active component in the hydrogenation catalyst is Pd, Ni, or ZnO, and/or adjuvant (such as Cu, Ag, Sn, Pb, Ni, alkali metal, rare earth, alkali earth metal, their oxide, hydroxide, or salt), and its carrier is Al2O3, SiO2, mol. sieve, ZnO, or CaCO3.

ACCESSION NUMBER: 2002:729559 CAPLUS  
 DOCUMENT NUMBER: 137:217383  
 TITLE: Process for preparing ethylene by selective hydrogenation of acetylene  
 INVENTOR(S): Tao, Jialin; Yu, Zuolong; Lin, Shihu; Kang, Xingwu; Qu, Meizhen; Li, Qing; Gao, Lizhen  
 PATENT ASSIGNEE(S): Chengdu Inst. of Organic Chemistry, Chinese Academy of Sciences, Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.  
 CODEN: CNXKEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1317468	A	20011017	CN 2000-112847	20000413
PRIORITY APPLN. INFO.:			CN 2000-112847	20000413

L38 ANSWER 63 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



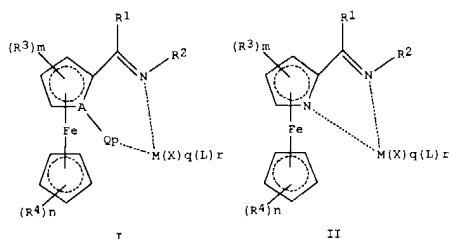
AB A solid-phase-supported transition metal complex catalyst which is represented by the formula (I), wherein A = polystyrene/polyethylene glycol copolymer resin; Q = lower alkyl, lower alkoxy, or a heterocycle optionally substituted by a halogen atom; L1 and L2 = halogeno, acetoxy, trifluoroacetoxy, trifluoromethanesulfonyl, tetrafluoroborate, or  $\pi$ -allyl; and M = copper, palladium, nickel, cobalt, rhodium, or platinum; and a solid-phase-supported transition metal catalyst which comprises a compound represented by the formula (II) wherein A and Q have the same meanings as defined above and supported thereon a transition metal selected among copper, palladium, nickel, cobalt, rhodium, and platinum. These catalysts are usable in various reactions, can be used to conduct reactions in an aqueous system, have sufficient catalytic activity even in an oxygen atmospheric, and can be recovered and reused. Thus, tris(dibenzylideneacetone)dipalladium 0.259, rac-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl 0.311, Et p-aminobenzoate 1.65, and sodium tert-butoxide 3.84 g were dissolved in 180 mL toluene and 3.8 mL 2-bromopyridine to give 4-[N,N-(2-pyridyl)amino]benzoic acid, 534 mg of which was reacted with 3.0 g algocel-NH2 in the presence of 460 mg 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide, 403 mg 1-hydroxybenzotriazole, 60 mL dimethylformamide, and palladium acetate to give a catalyst.

ACCESSION NUMBER: 2002:716331 CAPLUS  
 DOCUMENT NUMBER: 137:249495  
 TITLE: Solid-phase-supported transition metal catalysts  
 INVENTOR(S): Uozumi, Yasuhiro; Nakao, Ryu  
 PATENT ASSIGNEE(S): Zeria Pharmaceutical Co., Ltd., Japan  
 SOURCE: FCT Int. Appl., 25 pp.  
 CODEN: FIAXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002072644	A1	20020919	WO 2002-JP414	20020122
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,				

L38 ANSWER 63 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 EP 1375534 A1 20040102 EP 2002-715864 20020122  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 US 2004102631 A1 20040527 US 2003-471012 20030908  
 PRIORITY APPLN. INFO.: JP 2001-68333 A 20010312  
 WO 2002-JP414 W 20020122

OTHER SOURCE(S): MARPAT 137:249495  
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT



AB Transition metal complexes of the structures I or II (M = a transition metal selected from Groups 3-12, e.g., Pd, Ni or Fe; X = H, halide or C1-20 hydrocarbon group, or non-coordinative anion containing B, Al, P or Sb atoms; A = C, N or P; R1 = H or a C1-20 hydrocarbon group; R2, R3 and R4 = H, a C1-20 hydrocarbon group, a C1-20 hydrocarbon group containing halide, Si, N, O or S atoms, and R1 and R2, or adjacent R3s or R4s may form together a ring; Q = H, a C1-20 hydrocarbon group or a C1-20 hydrocarbon group containing Si, N, P, O or S atoms which can coordinate to M, L = neutral electron-donating ligand, e.g., ether, nitrile, amine or phosphine; m = 1-3; n = 1-5; p = 0-1; q = 1-3 and z = 0-3) were synthesized and used as catalysts for ethylene polymerization or ethylene/methyl acrylate copolymn.

ACCESSION NUMBER: 2002:658731 CAPLUS  
DOCUMENT NUMBER: 137:201710  
TITLE: Olefin polymerization catalysts based on transition metal complexes of azaferrrocenyl ligands  
INVENTOR(S): Watanabe, Makoto; Okada, Takashi; Sato, Morihiko; Hamura, Satoshi; Tanabiki, Masao  
PATENT ASSIGNEE(S): Tosoh Corporation, Japan  
SOURCE: U.S. Pat. Appl. Publ., 43 pp.  
CODEN: USXKCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002120160	A1	20020829	US 2001-22772	20011220
JP 200225918	A2	20020911	JP 2001-384847	20011218

PRIORITY APPLN. INFO.: JP 2000-391840 A 20001220

OTHER SOURCE(S): MARPAT 137:201710

L38 ANSWER 65 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB The present invention relates to a catalytic conversion interface and method of use in continuous flow isotope ratio mass spectrometry. The interface comprises a catalyst for combusting a sample containing organic compds. to yield CO<sub>2</sub> and/or N<sub>2</sub> at temps. of <800°. The catalyst comprises a metal selected from Pd, Ni, Pt, Rh, Ag, Ru, Co, Fe, Mo, W, Sn, Gd, Ce, Pr and mixts. thereof.

ACCESSION NUMBER: 2002:555401 CAPLUS  
DOCUMENT NUMBER: 137:103157  
TITLE: Catalytic conversion interface  
INVENTOR(S): Meier-Augenstein, Wolfram; Thomson, James; Cairns, James  
PATENT ASSIGNEE(S): The University Court of the University of Dundee, UK  
SOURCE: PCT Int. Appl., 24 pp.  
CODEN: FIXKX2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002057007	A2	20020725	WO 2002-GB172	20020116
WO 2002057007	A3	20040219		

W: AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SE, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: GB 2001-1164 A 20010117

L38 ANSWER 66 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB An oxide catalyst is described to the use for the catalytic oxidation or ammoxidn. of propane or isobutane in the gas phase, which a composition represented by the formula Mo<sub>1</sub>Va<sub>1</sub>Sb<sub>1</sub>b<sub>1</sub>Nb<sub>1</sub>c<sub>1</sub>Zd<sub>1</sub>om contains, whereby

Z is Zl element, which is selected from the group consisting of tungsten, chromium, titanium, aluminum, tantalum, zirconium, hafnium, manganese, iron, ruthenium, cobalt, rhodium, nickel, palladium, platinum, zinc, boron, indium, germanium, tin, lead, Bismuth, yttrium, gallium, rare earth elements and alkaline-earth metals, and a, b, c, d and n in each case the atomic proportions of vanadium (V), antimony (Sb), 0.1 ≤ a < 0.4, 0.1 < b ≤ 0.4, 0.01 ≤ c ≤ 0.3, 0 ≤ d ≤ 1, under the condition that a < b and n is a whole number, which is certain by the value requirements of the other present elements and agrees with these. This catalyst provides unsatd. carboxylic acids or unsatd. nitriles with higher selectivity, and the high selectivity of this catalyst lasts longer.

ACCESSION NUMBER: 2002:552229 CAPLUS  
DOCUMENT NUMBER: 137:109610  
TITLE: Oxide catalyst for the oxidation or ammoxidation of propane or isobutane to unsaturated compounds  
INVENTOR(S): Hinago, Hidenori; Watanabe, Mamoru  
PATENT ASSIGNEE(S): Asahi Kasei K.K., Japan  
SOURCE: Ger. Offen., 32 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10161318	A1	20020725	DE 2001-10161318	20011213
JP 2002239382	A2	20020827	JP 2001-375891	20011210
US 2002115879	A1	20020822	US 2001-11286	20011211
CN 1360371	A	20020731	CN 2001-143806	20011213

PRIORITY APPLN. INFO.: JP 2000-378530 A 20001213

L38 ANSWER 67 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Unsatd. nitriles are prepared with high selectivity by gas-phase ammoxidn.  
 of propane or isobutane using MoInBpSbqXrOn (X = Ti, W, Cr, Ce, La, Ta, Zr, Y, Yb, Sn, Hf, Mn, Re, Fe, Ru, Co, Rh, **Pd**, Pt, **Ag**, **Sa**, B, Al, Ga, In, Ge, Pb, Bi, V, Pr, Nd, Sm, Gd, Tm, Ru, Tb, Dy, Ho, Er, Tm, Lu, alkaline earth metal; p, q, r, n = atomic ratio based on 1 atom of Mo, where  $0 < p \leq 5$ ,  $0 < q \leq 10$ ,  $0 \leq r \leq 5$ , and n = atomic ratio of O determined by the oxidation number of metals) as **catalysts**. Thus, ammoxidn. of propane by contacting with MoNbO<sub>1.15</sub>SbO<sub>0.30</sub>On gave acrylonitrile with 33.0% selectivity.  
 ACCESSION NUMBER: 2002:512991 CAPLUS  
 DOCUMENT NUMBER: 137:63607  
 TITLE: High-activity ammoxidation **catalysts** for manufacture of unsaturated nitriles  
 INVENTOR(S): Yano, Hiroyuki; Hinako, Hidenori  
 PATENT ASSIGNEE(S): Asahi Kasei Corporation, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: Japanese  
 PATENT INFORMATION: 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002191974	A2	20020710	JP 2000-396564	20001227
PRIORITY APPLN. INFO.:			JP 2000-396564	20001227

L38 ANSWER 68 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Pd- and Co-catalyzed trimerization of diphenylethynyl-bridged diporphyrins  
 (1: (I; R<sub>1</sub> = R<sub>2</sub> = 3,5-di-tert-butylphenyl), 3: (I; R<sub>1</sub> = 3,5-diethoxyphenyl, R<sub>2</sub> = H)) gave benzene-centered cyclic porphyrin hexamers C<sub>6</sub>(p-C<sub>6</sub>H<sub>4</sub>-R)<sub>6</sub>, [2: (II, R = M(10,15,20-tris(3,5-di-tert-butylphenyl)porphin-5-yl), M = **Pd**, **Ni**, **Cu**), 4: (II, R = M(15-(3,5-di(octyloxy)phenyl)porphin-5-yl), M = **Ni**, **Cu**)). The host-guest interaction of II (R = **zinc** (10,15,20-tris(3,5-di-tert-butylphenyl)porphin-5-yl)) and II (R = **zinc**(15-(3,5-di(octyloxy)phenyl)porphin-5-yl)) with chiral amines was examined  
 ACCESSION NUMBER: 2002:483477 CAPLUS  
 DOCUMENT NUMBER: 137:303756  
 TITLE: Efficient synthesis of benzene-centered cyclic porphyrin hexamers  
 AUTHOR(S): Takase, Masayoshi; Ismael, Rami; Murakami, Ryo; Ikeda, Masako; Kim, Dongho; Shinmori, Hideyuki; Furuta, Hiroyuki; Osuka, Atsuhiko  
 CORPORATE SOURCE: CREST, Graduate School of Science, Department of Chemistry, Kyoto University, Japan Science and Technology Corporation (JST), Kyoto, 606-8502, Japan  
 SOURCE: Tetrahedron Letters (2002), 43(29), 5157-5159  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 69 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The d. functional theory and the cluster model approach enable the quant. computational anal. of the adsorption of small chemical species on metal surfaces. Two studies are presented, one concerning the adsorption of acetylene on Cu (100) surfaces, the other concerning the adsorption of ethylene on the (100) surfaces of **Ni**, **Pd**, and Pt. These studies support the usefulness of the cluster model approach in studies of heterogeneous catalysis involving transition metal **catalysts**.  
 ACCESSION NUMBER: 2002:432072 CAPLUS  
 DOCUMENT NUMBER: 137:24643  
 TITLE: The adsorption of acetylene and ethylene on transition metal surfaces  
 AUTHOR(S): Bernardo, C. G. P. M.; Gomes, J. A. N. F.  
 CORPORATE SOURCE: Cequp/Departamento de Química, Faculdade de Ciências, Universidade do Porto, Oporto, 4150, Port.  
 SOURCE: Progress in Theoretical Chemistry and Physics (2001), 8(Theoretical Aspects of Heterogeneous Catalysis), 217-240  
 CODEN: PTCBPB; ISSN: 1567-7354  
 PUBLISHER: Kluwer Academic Publishers  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 76 THERE ARE 76 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 70 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB This hydrogenation **catalyst** is composed of active component, Pd or Pd and Ni, at a level of 0.005-0.5%, one metal from Group IB elements at 0.01-1.5%, and addnl. Al<sub>2</sub>O<sub>3</sub> carrier. The ratio of Group IB metal to Pd is 0.5-7:1, and that of Group IB metal to Pd and Ni 0.5-7:1. The **catalyst** has surface area of 5-120 m<sup>2</sup>/g, a pore volume of 0.2-0.72 mL/g, and an average pore diameter of 10-70 nm.  
 ACCESSION NUMBER: 2002:405879 CAPLUS  
 DOCUMENT NUMBER: 136:372073  
 TITLE: Highly selective hydrogenation **catalyst** for unsaturated alkyne in hydrocarbon flow  
 INVENTOR(S): Wang, Ensheng; Zhang, Dingwa; Dong, Wenhuan  
 PATENT ASSIGNEE(S): Lanzhou Petrochemical Branch, China Petrochemical & Natural Gas Co., Ltd., Peop. Rep. China; Chemical Research Inst. of Lanzhou Petrochemical Co., China  
 SOURCE: Faming Zhuanli Shengqing Gongkai Shuomingshu, 10 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1299858	A	20010620	CN 2000-131803	20001017
CN 1107708	B	20030507		
PRIORITY APPLN. INFO.:			CN 2000-131803	20001017

L38 ANSWER 71 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A procedure is described for the production of an oxide **catalyst**, which contains Mo, V, Nb, Zl of Sb and Te, and Zl of W, Cr, Ti, Al, Ta, Zr, Hf, Mn, Re, Fe, Ru, Co, Rh, Ni, Pd, Pt, Zn, B, Ga, In, Ge, Sn, P, Pb, Bi, V, rare-earth elements, and alkaline-earth elements, whereby the procedure covers the supply of an aqueous mixture containing compds. of the element components of the **catalyst**, drying the aqueous mixture and calcining, whereby in the aqueous mixture Zl part of the Nb compound precursor is in the form of a chelate formed in-situ in which a hydroxyl group is bonded to an oxygen atom or a carbon atom. In addition is revealed a procedure for the production of (meth)acrylonitrile or (meth)acrylic acid, by ammoxidn. or oxidation of propane or isobutane in the gas phase in presence of this oxide **catalyst** is accomplished. The presence of the Nb complexing agent provides **catalyst** with improved activity and prevents separation of the Nb compound during **catalyst** preparation

ACCESSION NUMBER: 2002:403634 CAPLUS  
 DOCUMENT NUMBER: 137:6572  
 TITLE: Procedure for the production of an oxide **catalyst** for the oxidation or ammoxidation  
 INVENTOR(S): Hinago, Hidenori; Yano, Hiroyuki  
 PATENT ASSIGNEE(S): Asahi Kasei K.K., Japan  
 SOURCE: Ger. Offen., 28 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10145958	A1	20020529	DE 2001-10145958	20010918
JP 2002159853	A2	20020604	JP 2001-260196	20010829
CN 1344584	A	20020417	CN 2001-140616	20010918
CN 1130255	B	20031210		
US 2003017944	A1	20030123	US 2001-953970	20010918
US 6610629	B2	20030826		

PRIORITY APPLN. INFO.: JP 2000-281947 A 20000918

L38 ANSWER 72 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review, in this work we present the results of our Monte-Carlo (MC) simulation program for the segregation behavior of some Pd-X (X= Ag, Cu, Ni, Pt) nanoclusters as a function of temperature, bulk composition, adsorbate coverage (H, O, CO, NO), cluster size, and the metal-support interaction. The role of segregation properties on some simple reactions like CO oxidation, NO reduction and 1,3-butadiene hydrogenation on these nanoclusters has been investigated with the help of MC results and the bond-order conservation model. In case of Pd-Ni nanoclusters, surface coordination has been shown to be responsible for a peak in the 1,3-butadiene hydrogenation reaction at 5 atomic% of Pd in Ni. The calculated rate of CO2 formation from CO oxidation shows higher activity for smaller monometallic Pd particles in total agreement with exptl. observations. Activation energy anal. for the Pd-Cu bimetallic nanoclusters shows that CO2 formation is the rate-limiting step for the overall CO-NO reaction. The most active sites are found to be the three-fold hollow adsorption sites with three Cu nearest neighbors, and the adsorption sites with two Cu atoms and one Pd atom as nearest neighbors.

ACCESSION NUMBER: 2002:366192 CAPLUS  
 DOCUMENT NUMBER: 136:346318  
 TITLE: Surface composition and catalytic activity of Pd-based bimetallic nanostructures  
 AUTHOR(S): Khanra, Badal C.  
 CORPORATE SOURCE: Condensed Matter Physics Group, Saha Institute of Nuclear Physics, Calcutta, 700064, India  
 SOURCE: Science and Technology of Nanostructured Materials, [Papers presented at the International Conference on Science and Technology of Nanostructured Materials], Puri, India, Jan. 4-8, 2001 (2001), 23-37.

Editor(s): Rao, B. K. Nova Science Publishers, Inc.:  
 Huntington, N. Y.  
 CODEN: 69CPDR; ISBN: 1-59033-144-3  
 DOCUMENT TYPE: Conference; General Review  
 LANGUAGE: English  
 REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 73 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Diamond is typically grown in molten metal of Group VIIIB (Iron Group) at high pressure where diamond is stable (Sung 1997). The C source is graphite and the molten metal serves as a **catalyst**-solvent (Sung and Tai 1997a). Diamond can also be deposited in partial vacuum where graphite is stable by thermal decomposition of carbonaceous gas (e.g., methane). Such a CVD process often requires the presence of H atoms as **catalyst**. At low pressure, diamond can be easily converted into graphite when brought in contact with molten Group VIIIB transitional metals. However, Roy (1992) found that if H atoms are present, the reverse reaction could take place, i.e., diamond could be formed from graphite inside the molten metal even though graphite is the stable phase. Since then, numerous expts. were conducted in synthesizing metastable diamond with molten metal under the atmospheric of H atoms. However, it was disputed if the diamond so formed is derived from carbonaceous gas as in the case of CVD methods (Chung and Sung 2001), or diamond is indeed nucleated inside molten metal that is overly saturated with C (Mallika et al, 1999). Probably diamond is formed from overly saturated C atoms provided these C atoms are surrounded by H atoms inside the pseudo lattice of molten metal (Sung and Tai 1995). In this case, the m.p. of the metal could be suppressed well below the eutectic point of metal-C due to the large incorporation of H. In order to further elucidate the mechanisms of the diamond formation in liquid phase, various binary metal systems (Cu-Mn, Cu-Ni, Cu-Pd, Ni-Pd, Mn-Pd, Ni-Mn) were prepared from their component powders. These powders were mixed with graphite powder and used as a precursor in a hot filament CVD system. The atmosphere contained either pure H or it also incorporated approx. 1% methane. The metal precursors were melted atomic

ACCESSION NUMBER: 2002:333170 CAPLUS  
 DOCUMENT NUMBER: 137:81021  
 TITLE: Metastable growth of diamond in molten alloy  
 AUTHOR(S): Chen, Yen-Te; Hsu, Kai-Hon; Chung, Hsiao-Kuo; Sung, James C.  
 CORPORATE SOURCE: Kinik Company, Taipei, Taiwan  
 SOURCE: NASA Conference Publication (2001), 210948(Proceedings of the Sixth Applied Diamond Conference/Second Frontier Carbon Technology Joint Conference, 2001), 305-316  
 CODEN: NACPDJ; ISSN: 0191-7811  
 PUBLISHER: National Aeronautics and Space Administration  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 74 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A **catalyst** comprising a promoted mixed metal oxide is useful for the vapor phase oxidation of an alkane or a mixture of an alkane and an alkene to an unsatd. carboxylic acid and for the vapor phase ammoxidn. of an alkane or a mixture of an alkane and an alkene to an unsatd. nitrile. The multi-metal oxide **catalyst** comprises at least one element selected from the group consisting of Ni, Pd, Cu, Ag and Au.

ACCESSION NUMBER: 2002:252972 CAPLUS  
 DOCUMENT NUMBER: 136:279833  
 TITLE: Promoted multi-metal oxide oxidation or ammoxidation **catalysts**  
 INVENTOR(S): Chaturvedi, Sanjay; Gaffney, Anne Mae; Han, Scott; Le, Hung Nhu Dominique; Song, Ruozhi; Heffner, Michele Doreen; Vickery, Elsie Mae  
 PATENT ASSIGNEE(S): Rohm and Haas Company, USA  
 SOURCE: Eur. Pat. Appl., 24 pp.  
 CODEN: EPXKXW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1192987	A1	20020403	EP 2001-308131	20010925
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 2002065431	A1	20020530	US 2001-928197	20010810
US 6407280	B1	20020618		
BR 2001004285	A	20020507	BR 2001-4285	20010927
CN 1347756	A	20020508	CN 2001-140941	20010927
JP 2002177784	A2	20020625	JP 2001-300840	20010928
US 6504053	B1	20030107	US 2002-144924	20020514
PRIORITY APPLN. INFO.:			US 2000-235979P	P 20000928
			US 2000-235984P	P 20000928
			US 2000-236000P	P 20000928
			US 2000-236130P	P 20000928
			US 2001-286219P	P 20010425
			US 2001-928197	A 20010810

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 75 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Colloidal mixing hydroxide, which consists of nickel ions and copper ions, was allowed to adsorb onto an ABS resin. After making these colloids dry up, carbon and then zinc were deposited on it using the phys. vapor deposition technique. Articles containing the colloids, carbon and zinc were used as substitutes for palladium catalyst in the electroless nickel plating. In the 90 peel strength test, all of these electroless plated nickel films showed about 200 kg/m compared with the peel strength obtained by the conventional method which couples tin (2+) as a sensitizer with palladium (2+) as an activator. The strong adhesion resulted in a cohesive fracture of the ABS resin during the peeling test. Such a result shows the following: (1) the colloids invaded and adsorbed into the etching holes which occurred in the etching of the ABS resin by the chromic acid, (2) the colloids were reduced to nickel and copper by the electrons produced by dissoln. of the zinc in the plating solution, and then the nickel and copper worked as an anchor for the plated nickel films. Also the nickel naturally worked as a self-catalyst for continuing the electroless nickel plating.

ACCESSION NUMBER: 2002:247133 CAPLUS  
 DOCUMENT NUMBER: 137:171026  
 TITLE: Application of vapor-plated zinc as a substitute for palladium catalyst in the nickel-phosphorus electroless plating  
 AUTHOR(S): Tsuru, Yutaka; Mochinaga, Kouji; Kume, Michiyuki; Ooyagi, Yashichi  
 CORPORATE SOURCE: Faculty of Engineering, Kyushu Institute of Technology, Tobata-ku, Kitakyusyu-shi, Fukuoka, 804-8550, Japan  
 SOURCE: Hyomen Gijutsu (2002), 53(1), 78-80  
 CODEN: HYGIEH; ISSN: 0915-1869  
 PUBLISHER: Hyomen Gijutsu Kyokai  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 77 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Silica-supported chitosan-palladium complex SiO2-CS (Chitosan)-PdCl2 has good conversion and regioselectivity in the hydroesterification of styrene. The high activity and selectivity of the catalyst are achieved by the synergic effect of Pd-Ni bimetallic system and the effect of polymer protection. Effects of reaction parameters were studied to achieve optimum reaction conditions. The hydroesterification of styrene derivs. is also investigated.

ACCESSION NUMBER: 2002:243211 CAPLUS  
 DOCUMENT NUMBER: 137:21739  
 TITLE: Regioselective hydroesterification of styrene and its derivatives catalyzed by polymer supported bimetallic catalysts  
 AUTHOR(S): Zhang, Jun; Xia, Chun-Gu  
 CORPORATE SOURCE: State Key Laboratory for Oxo Synthesis and Selective Oxidation, Lanzhou Institute of Chemical Physics, The Chinese Academy of Sciences, Lanzhou, 730000, Peop. Rep. China  
 SOURCE: Fenzi Cuihua (2001), 15(6), 427-430  
 CODEN: FECUEN; ISSN: 1001-3555  
 PUBLISHER: Kexue Chubanshe  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese

L38 ANSWER 76 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The adsorption energy of CO-2 and the energy barrier of various pathways of CO2 activation on Cu(111), Pd(111), Fe(111) surfaces were predicted using UBI-QEP energetics method. The theor. results show that the stability of adsorbed CO2 and the reactivity of CO2 toward dissociation on the above four transition metal surfaces follow the same order: Fe(111)>Ni(111)>Cu(111)>Pd(111). This suggests that CO-2 is a pivotal intermediate in the process of CO2 dissociation. The final products of CO2 dissociation are CO(a) and O(a) on the Cu, Pd, Ni surfaces and C(a) and O(a) on Fe surface, resp. The hydrogenation of CO2 is an effective mode for CO2 activation on Cu, Ni, and Fe surfaces, but is unfavorable on Pd surface. On Cu and Pd surfaces, carbonate species would also be a important intermediate for CO2 activation.

ACCESSION NUMBER: 2002:243332 CAPLUS  
 DOCUMENT NUMBER: 137:11309  
 TITLE: Energetics study of CO2 activation on metal surface  
 AUTHOR(S): Fu, Gang; Lu, Xin; Xu, Xin; Wan, Hui-Lin  
 CORPORATE SOURCE: Department of Chemistry, Institute of Physical Chemistry, State Key Laboratory for Physical Chemistry of Solid Surface, Xiamen University, Xiamen, 361005, Peop. Rep. China  
 SOURCE: Fenzi Cuihua (2001), 15(6), 484-486  
 CODEN: FECUEN; ISSN: 1001-3555  
 PUBLISHER: Kexue Chubanshe  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese

L38 ANSWER 78 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The invention relates to an amino acid or amino thioacid complex Fe, Co, Ni, Pd, Pt or Ir, and preferably represents Ni. The invention further relates to a method for producing the same and to the use thereof for polymerizing olefins giving polymers with good morphol. and high bulk d. A typical complex was manufactured by washing a mixture of 1.88 g (Ph3P)2NiCl2 and 1.12 g Zn powder with aq NH4Cl, drying at 110°, mixing 35 min at 35° with 25 mL THF and 0.69 mL 2-bromotoluene, dissolving 226.2 g resulting complex in 20 mL THF, adding a suspension prepared by mixing 22.5 mg glycine with 10 mL MeOH and adding an equimol. NaOMe soln. and stirring 2-3 h.

ACCESSION NUMBER: 2002:240632 CAPLUS  
 DOCUMENT NUMBER: 136:263604  
 TITLE: Amino acid and amino thioacid complexes and the use thereof in producing olefin polymers  
 INVENTOR(S): Mihan, Shahram; Beck, Wolfgang; Ponikvar, Walter  
 PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany  
 SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002024330	A2	20020328	WO 2001-EP10804	20010919
WO 2002024330	A3	20020718		
W: JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, SE, TR				
DE 10047461	A1	20020411	DE 2000-10047461	20000921
EP 1322417	A2	20030702	EP 2001-982318	20010919
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
JP 2004509153	T2	20040325	JP 2002-528391	20010919
US 2004024150	A1	20040205	US 2003-380475	20030320
PRIORITY APPLN. INFO.:				
			DE 2000-10047461	A 20000921
			WO 2001-EP10804	W 20010919

OTHER SOURCE(S): MARPAT 136:263604

L38 ANSWER 79 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The method comprises hydrogenating a petroleum resin (e.g., dicyclopentadiene-styrene copolymer containing S) in the presence of **catalysts** containing a platinum- or palladium-type **catalyst** layer (e.g., alumina-supported palladium) and a nickel-type **catalyst** layer [e.g., N 112 (diatomite-supported nickel)], wherein an adsorbent layer [e.g., N 201 (**copper**-chromium compound)] is located between the two **catalyst** layers and sulfur compds. are absorptive treated.

ACCESSION NUMBER: 2002:236928 CAPLUS  
DOCUMENT NUMBER: 136:263914  
TITLE: Method for manufacturing hydrogenated petroleum  
resins

from low-cast raw materials containing sulfur compounds

INVENTOR(S): Matsumoto, Nobuaki  
PATENT ASSIGNEE(S): Idemitsu Petrochemical Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

PATENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002088116	A2	20020327	JP 2000-279159	20000914
PRIORITY APPLN. INFO.:			JP 2000-279159	20000914

L38 ANSWER 80 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A review. This article concerns the catalysis of polycondensations and polyaddns.; its scope is limited to the use of metal derivs. and enzymes. **Palladium**, **nickel**, ruthenium and **copper** derivs. are studied as **catalysts** of carbon-carbon forming polycondensations when applied to polymeric systems and models; side reactions are analyzed. Palladium-derivs. mainly concern Heck and Suzuki polycondensations. The influence of the nature of the **catalyst** on reactivity is also an important part of this article; it is not limited

to carbon-carbon forming reactions but also to other polycondensations such as polyesterifications. Some examples concern systems activated by Ni(0), CsF and rhodium complexes as activators. A general bibliog. of enzyme-catalyzed polycondensations is given; however only polyesterifications are studied, particularly aliphatic, unsatd. and aromatic polyesters; side reactions and linear chains/cycles equilibrium are particularly studied.

ACCESSION NUMBER: 2002:219025 CAPLUS  
DOCUMENT NUMBER: 136:402045  
TITLE: New aspects of catalysis in polycondensation  
AUTHOR(S): Marechal, E.  
CORPORATE SOURCE: Laboratoire de Synthèse Macromoléculaire, Université P. M. Curie, Paris, 75252, Fr.  
SOURCE: Current Organic Chemistry (2002), 6(2), 177-208  
CODEN: CORCFE, ISSN: 1385-2728

PUBLISHER: Bentham Science Publishers

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

REFERENCE COUNT: 151 THERE ARE 151 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 81 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A method for fabricating a semiconductor device involves forming an insulator film on a substrate in a film deposition chamber, treating the insulator film with a plasma from a noble gas and H<sub>2</sub> in the same film deposition chamber, depositing an amorphous Si film on the insulator film in the same film deposition chamber, and crystallizing the Si film. Specifically, the noble gas may comprise He, Ne, Ar, Kr, and/or Xe. Addnl., the method may involve crystallization using a **catalyst** such as **Ni**, **Pd**, **Pt**, **Cu**, **Ag**, **Au**, **In**, **Sn**, **Pb**, **As**, and/or **Sb**. By carrying out the fabrication in the same film deposition chamber, the impurity concentration of the amorphous Si film

is decreased.

ACCESSION NUMBER: 2002:216408 CAPLUS

DOCUMENT NUMBER: 136:255669

TITLE: Fabrication of semiconductor device

INVENTOR(S): Asami, Takeomi; Ichijou, Mitsuhiro; Chokai, Satoshi;

Otsuki, Takashi; Kanakubo, Yoko; Yamazaki, Shunpei

PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

PATENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002083773	A2	20020322	JP 2000-270849	20000906
PRIORITY APPLN. INFO.:			JP 2000-270849	20000906

L38 ANSWER 82 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A review discusses the use of metal-catalyzed coupling reactions in the preparation of biaryls. The use of **copper**, **nickel**, and **palladium catalysts** in coupling reactions such as the Ullman, Paschorr, Stille, and Suzuki coupling reactions for the preparation of biaryls is discussed extensively; the use of other reactions such as nucleophilic aromatic substitution and oxidative coupling to prepare biaryls is also discussed. The coupling reactions of aryl halides, arylstannanes, arylboronic acids, aryl silanes, and of aryl derivs. of **sino**, germanium, lead, bismuth, antimony, **copper**, manganese, zirconium, and indium are discussed.

ACCESSION NUMBER: 2002:172568 CAPLUS

DOCUMENT NUMBER: 136:355005

TITLE: Aryl-Aryl Bond Formation One Century after the

Discovery of the Ullmann Reaction

AUTHOR(S): Hassan, Jwanro; Sevignon, Marc; Gozzi, Christel;

Schulz, Emmanuelle; Lemaire, Marc

CORPORATE SOURCE: Laboratoire de Catalyse et Synthèse Organique, UMR

5622, Université Claude Bernard Lyon 1, CPE,

Villeurbanne, 69622, Fr.

SOURCE: Chemical Reviews (Washington, D. C.) (2002), 102(5),

1359-1469

CODEN: CHREAY, ISSN: 0009-2665

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

REFERENCE COUNT: 767 THERE ARE 767 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT



L38 ANSWER 83 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Glyceride derivs. of conjugated unsatd. fatty acids, having a number of  
 physiol. activities and good tastes are produced inexpensively by a  
 simple method. Glyceride derivs. containing fatty acids having  $\geq 3$  conjugated  
 unsatd. bonding, or natural products (e.g., tung oil) containing these  
 glyceride derivs. are partially hydrogenated, decreasing a number of  
 double bonds, and producing glyceride derivs. containing conjugated unsatd.  
 fatty acids as the side chains. The partial hydrogenation is done in the  
 presence of metal catalysts such as copper chromite,  
 Ni, Pd, and Pt. The glyceride derivs. are useful for  
 controlling obesity, cancer, and immunity, and improving fat metabolism

ACCESSION NUMBER: 2002:98825 CAPLUS  
 DOCUMENT NUMBER: 136:150276  
 TITLE: Production of glyceride derivatives for food and  
 pharmaceuticals  
 INVENTOR(S): Kudo, Satoshi; Kataoka, Takehito; Mizusawa, Naomi  
 PATENT ASSIGNEE(S): Yakult Honsha Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002038189	A2	20020206	JP 2000-223682	20000725
PRIORITY APPLN. INFO.:			JP 2000-223682	20000725

L38 ANSWER 84 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Ion-exchanged zeolite ZSM-5 is the best known catalyst for  
 direct NOX decomposition and a viable candidate for NOX reduction with  
 methane.  
 The preparation is crucial for the efficiency of the conversion and the  
 ion-exchange, with Cu2+, Ni2+ or Pd2+, the dual exchange with Cu2+/Ni2+  
 or Cu2+/Pd2+, under appropriate pH and ion concns. for maximum dispersion,  
 is described.

ACCESSION NUMBER: 2002:81690 CAPLUS  
 DOCUMENT NUMBER: 136:360128  
 TITLE: Catalyst preparation through ion-exchange of  
 zeolite Cu-, Ni-, Pd-,  
 CuNi- and CuPd-ZSM-5  
 AUTHOR(S): Ohman, L. O.; Ganemi, B.; Bjornbom, E.; Rahkamaa, K.;  
 Keiski, R. L.; Paul, J.  
 CORPORATE SOURCE: Inorganic Chemistry, Umea University, Umea, 901 87,  
 Swed.  
 SOURCE: Materials Chemistry and Physics (2002), 73(2-3),  
 263-267  
 CODEN: MCHEDR; ISSN: 0254-0584  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 33  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 85 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Polymers are produced using transition metal complexes that have sites  
 capable of binding a Lewis acid in close proximity to the metal center.  
 The patent also relates to a process for polymerizing an olefin component  
 comprising one or more polymerizable olefins, comprising the step of  
 contacting, under polymerizing conditions, said olefin component with a  
 polymerization catalyst system, characterized in that the polymerization  
 catalyst system comprises a group 3-11 transition metal or  
 lanthanide, a coordinating ligand, and a Lewis acid component, wherein  
 the Lewis acid component is : (a) neutral and covalently bound to said  
 coordinating ligand, or (b) pos. charged and bound to a Lewis basic site  
 of said coordinating ligand. The transition metal is Fe, Co, Pd  
 , Ni or Cu.

ACCESSION NUMBER: 2001:886259 CAPLUS  
 DOCUMENT NUMBER: 136:20365  
 TITLE: Preparation of transition metal complexes as  
 catalyst for polymerization of olefins  
 INVENTOR(S): Johnson, Lynda K.; Bennett, Alison M. A.; Dobbs,  
 Kerwin D.; Lonkin, Alex S.; Ittel, Steven D.; Wang,  
 Ying; Radzewich, Catherine E.; Wang, Lin  
 PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA  
 SOURCE: FCT Int. Appl., 79 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001092347	A2	20011206	WO 2001-US17628	20010531
WO 2001092347	A3	20030116		
W: AF, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001065260	A5	20011211	AU 2001-65260	20010531
US 2002028897	A1	20020307	US 2001-870596	20010531
US 2002037982	A1	20020328	US 2001-870597	20010531
US 6541585	B2	20030401		
EP 1292623	A2	20030319	EP 2001-939778	20010531
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003535190	T2	20031125	JP 2002-500958	20010531
US 2003130449	A1	20030710	US 2002-272765	20021017
US 2003130453	A1	20030710	US 2002-273049	20021017
US 2004158012	A1	20040812	US 2004-761030	20040120
PRIORITY APPLN. INFO.:			US 2000-208087P	P 20000531
			US 2000-211601P	P 20000615
			US 2000-214036P	P 20000623

L38 ANSWER 85 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 US 2001-264537P P 20010126  
 US 2001-294794P P 20010531  
 US 2001-871100 A3 20010531  
 WO 2001-US17628 W 20010531  
 US 2002-57090 A3 20020125

OTHER SOURCE(S): MARPAT 136:20365

L38 ANSWER 86 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Hydrogenation activity and stability of supported Pd **catalysts** immobilized by poly(2-methyl-5-vinylpyridine) was studied in relation to acid-base properties of inorg. supports (MgO, ZnO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>) and modifying additives (Co, Fe, Ni). Basic inorg. supports and Ni additive significantly increased reaction rate, selectivity, and maximum yield of the target product in hydrogenation of 3,7,11-trimethyl-1-dodecyn-3-ol. The yield of 3,7,11-trimethyl-1-dodecen-3-ol in ethanol was 80%.

ACCESSION NUMBER: 2001:874945 CAPLUS  
 DOCUMENT NUMBER: 136:184892  
 TITLE: Hydrogenation of 3,7,11-trimethyl-3-dodecyl-1-ol poly(2-methyl-5-vinylpyridine)-modified oxide-supported bimetallic **catalysts**  
 AUTHOR(S): Kulazhanov, K. S.; Kurmanbaeva, I. A.; Zharmagambetova, A. K.  
 CORPORATE SOURCE: Inst. Org. Kataliza Elektrokhim. im. D. V. Sokol'skogo, MON RK, Almaty, Kazakhstan  
 SOURCE: Izvestiya Ministerstva Obrazovaniya i Nauki Respubliki Kazakhstan, Natsional'noi Akademii Nauk Respubliki Kazakhstan, Seriya Khimicheskaya (2001), (2), 48-51  
 CODEN: IMSKFR; ISSN: 1025-9341  
 PUBLISHER: Nauchno-Izdatel'skii Tsentr "Gilym"  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 87 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The invention concerns selective **catalysts** for aromatization of aliphatic or alicyclic hydrocarbons with 27 C atoms in the chain, their production and use. The **catalysts** also contain a porous oxide or oxide mixture of Ti, Zr, and/or Hf to increase stability. The **catalysts** contain Group 5, 6, and 7 elements in an oxidized form 0,01-10 weight% and at least on the surface addnl. 1 or more elements selected from Ga and In of the Group III main group, Cu and Ag of the Group I, Zn of the Group II, Mn of the Group VII, as well as Fe, Co, Ni, Pd, and Pt of the Group VIII in the oxide and/or metal form 0.005-6 weight%.

ACCESSION NUMBER: 2001:864598 CAPLUS  
 DOCUMENT NUMBER: 136:8072  
 TITLE: **Catalyst** for aromatization of aliphatic and alicyclic hydrocarbons  
 INVENTOR(S): Lieske, Heiner; Hoang, Dang Lanh  
 PATENT ASSIGNEE(S): Institut Fuer Angewandte Chemie Berlin-Adlershof E.V., Germany  
 SOURCE: Ger. Offen., 6 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10023279	A1	20011129	DE 2000-10023279	20000508

PRIORITY APPLN. INFO.: DE 2000-10023279 20000508

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 88 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title method involves forming an insulator underlayer film on a substrate, forming an amorphous semiconductor film on the underlayer film, adding a crystallization **catalyst** to the amorphous semiconductor film, treating the amorphous semiconductor film with F, and crystallizing the amorphous semiconductor film. Alternatively, the insulator underlayer film may contain the **catalyst** and be treated with F. Specifically, the **catalyst** may comprise Ni, Pd, Pt, Cu, Ag, Au, In, Sn, Pb, As, and/or Sb. A film having a good crystallinity is formed. The method is useful in fabricating a display device.

ACCESSION NUMBER: 2001:847785 CAPLUS  
 DOCUMENT NUMBER: 135:364807  
 TITLE: Fabrication of semiconductor devices.  
 INVENTOR(S): Yamazaki, Shunpei; Asami, Isao; Ichijo, Mitsuhiro; Toriumi, Satoshi; Otsuki, Takashi  
 PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001326175	A2	20011122	JP 2000-140829	20000512

PRIORITY APPLN. INFO.: JP 2000-140829 20000512

L38 ANSWER 89 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title method includes applying a voltage across plasma-generating electrodes for generating plasma, introducing a dioxins-containing gaseous material into the plasma for converting dioxins mainly into organic substances other than dioxins and decreasing dioxins content in the gaseous material to be treated. Metal- or nonmetal-based **catalyst** layers are formed on at least a part of the plasma-generating electrodes. Cu-, Ag-, Au-, Ni-, Pd-, Pt-, Co-, Rh-, Ir-, Ru-, Os- and/or Re-based metal layers are formed on the electrode surfaces of the plasma-generating electrodes. The method can be used for removal of dioxins (e.g., 1,2,3,4,-TCDD) from incinerator flue gas, etc.

ACCESSION NUMBER: 2001:785909 CAPLUS  
 DOCUMENT NUMBER: 135:334556  
 TITLE: Method for purification of dioxins-containing gaseous material  
 INVENTOR(S): Ito, Kiyotaka; Nishimura, Masato; Hayashi, Yuji  
 PATENT ASSIGNEE(S): Daido Special Steel Co., Ltd., Japan; Fujitsu Ltd.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001300297	A2	20011030	JP 2000-121513	20000421

PRIORITY APPLN. INFO.: JP 2000-121513 20000421

L38 ANSWER 90 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The present invention relates to a novel **Cds** photocatalyst for producing hydrogen from water by photo-reaction and method for producing hydrogen by using of the **Cds** photocatalyst. The **Cds** photocatalyst is characterized by the following general formula (I)  $m(A)/Cd[M(B)]S$  V (m = doped metal element as an electron acceptor, such as Pt, Ru, Ir, Co, Rh, Cu, Pd, Ni, or the oxidized compound of one of these metals; A = a percentage by weight of m,

ranging from 0.10 to 2.50; M = catalyst element, e.g. V, Cr, Al and P; and B = a mole of M(M+Cd), ranging from 0.05 to 20.00). The object of the invention is to provide a novel photocatalyst for producing hydrogen with an optical activity in the range of visible light adjusted by a light filter, with a high yield of hydrogen and with an infinite lifetime of the photocatalyst.

ACCESSION NUMBER: 2001:741530 CAPLUS  
 DOCUMENT NUMBER: 135:280417  
 TITLE: Preparation of **Cds** photocatalyst for hydrogen production and method for producing hydrogen by use of the catalyst  
 INVENTOR(S): Park, Dae-chul; Baeg, Jin-ook  
 PATENT ASSIGNEE(S): Korea Research Institute of Chemical Technology, S. Korea; Chunggu Co., Ltd.  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6300274	B1	20011009	US 2000-511322	20000223
KR 2001002898	A	20010115	KR 1999-22953	19990618
AU 722308	B1	20000727	AU 2000-17535	20000216
BR 2000001739	A	20011113	BR 2000-1739	20000222
US 6297190	B1	20011002	US 2000-511324	20000223
CN 1310044	A	20010829	CN 2000-105389	20000225
RU 2175888	C2	20011120	RU 2000-105077	20000301
CN 1121271	B	20030917	CN 2000-801431	20000501
PRIORITY APPLN. INFO.:			KR 1999-22953	A 19990618
			AU 2000-17535	A 20000216

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

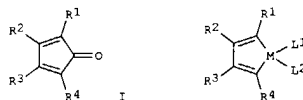
L38 ANSWER 92 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The title photocatalyst is represented by  $m(A)/Cd[M(B)]S$  (m = doping metal electron acceptor selected from Pt, Ru, Ir, Co, Rh, Cu, Pd, Ni, and an oxide thereof; A = weight% in the range of 0.10-2.50; M = V, Cr, Al, P; B = M/(M + Cd) in mole% in the range of 0.05-20.00). The manufacture of the title catalyst involving UV irradiation or sintering is also claimed. Comps. containing M are selected from  $VOCl_3$ ,  $VO_2$ ,  $VOCl_3$ ,  $K_2Cr_2O_7$ , etc. The formation of H<sub>2</sub> is carried out using an aqueous solution containing an electron donor Na<sub>2</sub>S, a reducing agent NaH<sub>2</sub>PO<sub>2</sub> 0.20-0.50, and the photocatalyst while directing solar light

or visible light transmitted through a filter at 10-60° in vacuum to 2 atmospheric

ACCESSION NUMBER: 2001:651367 CAPLUS  
 DOCUMENT NUMBER: 135:202946  
 TITLE: Cadmium sulfide-based photocatalyst for the formation of hydrogen  
 INVENTOR(S): Park, Dae Chul; Paik, Jin Wook  
 PATENT ASSIGNEE(S): Korea Chemical Research Institute, S. Korea; Chung Goo Co., Ltd.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001239164	A2	20010904	JP 2000-57978	20000229
JP 3421628	B2	20030630	JP 2000-57978	20000229
PRIORITY APPLN. INFO.:				

L38 ANSWER 91 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
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AB Cyclopentadienones [I; R1-R4 = H, optionally halo-substituted C1-40 hydrocarbyl, C1-40 alkoxy, or C6-40 aryloxy, NH<sub>2</sub>, HO, SR5R6R7; wherein R5, R6, R7 = optionally halo-substituted C1-40 alkyl, C6-40 arylalkyl, C1-40 alkoxy, or C6-40 arylalkoxy; provided that R1 and R2, R1 and R3, R1 and R4, R2 and R3, R2 and R4, or R3 and R4 are cross-linked to each other to form an (un)saturated ring optionally interrupted with O, S, or

NRA (wherein Ra = H, C1-40 hydrocarbyl)] are prepared by contacting metallacyclopentadienes [II; R1-R4 = same as above; L1, L2 = an anionic ligand or L1 and L2 are cross-linked to each other] with carbon monoxide in the presence of a transition metal compound containing Ni, Pd, Cu, Ru, or Rh. This process readily and selectively gives polysubstituted cyclopentadienones in one step. Thus, CO was bubbled into a solution of 1.0 mmol bis(η<sup>5</sup>-cyclopentadienyl)-2,3,4,5-tetrapropyl-1-zirconacyclopentadiene in 10 mL THF, followed by adding 1.0 mmol NiCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub>, and the resulting mixture was stirred at room temperature for 12

h to give 65% 2,3,4,5-tetrapropylcyclopenta-2,4-dien-1-one.

ACCESSION NUMBER: 2001:663636 CAPLUS  
 DOCUMENT NUMBER: 135:227115  
 TITLE: Method for preparation of cyclopentadienones by coupling of metallacyclopentadienes with carbon monoxide  
 INVENTOR(S): Takahashi, Tanotsu  
 PATENT ASSIGNEE(S): Foundation for Scientific Technology Promotion, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001247506	A2	20010911	JP 2000-63582	20000308
PRIORITY APPLN. INFO.:			JP 2000-63582	20000308

OTHER SOURCE(S): CASREACT 135:227115; MARPAT 135:227115

L38 ANSWER 93 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The reaction of oxalic amidines R1N:C(NHR2)C(NHR2):NR1 (oxamH2) with 2 equiv (allyl)2M or (acac)2M (M: Ni, Pd) gave dinuclear [(T)M(oxam)M(T)] containing dianionic bridging oxalamidinate and n<sup>3</sup>-allyl or acac as terminal ligands T. The complexes were characterized by elemental analyses, mass spectrometry, and 1H and 13C NMR spectroscopy. In addition, the solid-state structures of 1 (M = Ni; T = n<sup>3</sup>-allyl; R1 = p-tolyl; R2 = mesityl), 2 (M = Ni; T = n<sup>3</sup>-allyl; R1 = R2 = mesityl), 9 (M = Pd; T = acac; R1 = phenyl; R2 = p-tolyl), and 10 (M = Pd; T = acac; R1 = R2 = p-tolyl) were determined by x-ray single-crystal diffraction analyses. All complexes contain the metal ions in a square-planar environment. Also, in the n<sup>3</sup>-allyl complexes two isomers are found in which the two allyl groups are oriented in syn and anti positions. Trinuclear complexes [(T)M(oxam)M1(oxam)M(T)] (M1 = Zn; M = Ni or Pd) were obtained by treating Et<sub>2</sub>Zn with 2 equiv of an oxalic amidine in toluene, followed by addition of 2 equiv M(acac)<sub>2</sub> or Pd(allyl)<sub>2</sub>. The synthesis and solid-state x-ray anal. of tetranuclear [(T)M(oxam)M1(oxam)M1(oxam)M(T)] (16; M = M1 = Zn; oxam: R1 = p-tolyl; R2 = mesityl) is also described. A number of NiII complexes oligomerize or polymerize ethylene upon activation with MAO or Et<sub>3</sub>Al.

The catalyzes can be adjusted by the bulkiness of the nitrogen substituents, the nature of the cocatalyst, and the nuclearity of the complexes. The most active and selective polymerization catalyst is the heterotrinuclear Ni<sub>2</sub>ZnNi complex 12 which contains two tetramesityloxalamidinato bridges and acac as terminal ligands T. Complex 12 can be activated by using only 2 equiv Et<sub>3</sub>Al per Ni. Initial efforts show that the palladium complexes are catalysts for the Heck coupling.

ACCESSION NUMBER: 2001:560391 CAPLUS  
 DOCUMENT NUMBER: 135:312657  
 TITLE: Di-, tri-, and tetranuclear complexes of Ni, Pd, and Zn with oxalamidinato bridges: syntheses, structures and catalytic reactions  
 AUTHOR(S): Walther, Dirk; Dohler, Thomas; Theysen, Nils; Gorls, Helmar  
 CORPORATE SOURCE: Institut für Anorganische und Analytische Chemie der Universität Jena, Jena, 07743, Germany  
 SOURCE: European Journal of Inorganic Chemistry (2001), (8), 2049-2060  
 CODEN: EJICPD; ISSN: 1434-1948  
 PUBLISHER: Wiley-VCH Verlag GmbH  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 94 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In the presence of a sulfide catalyst containing Zl of Cr, Mo, and W, a waste gas containing NOX and SOX is heated together with a reducing agent to remove NOX and SOX. The catalyst may further contain Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Zn, Cd and/or Hg and CO may be used as the reducing agent. The catalyst can efficiently and simultaneously reduce and remove NOX and SOX and detoxicate waste gases without being deteriorated in catalytic activity by poisoning with SOX.

ACCESSION NUMBER: 2001:551726 CAPLUS  
 DOCUMENT NUMBER: 135:141535  
 TITLE: Waste gas treatment using metal sulfide-based catalyst for simultaneous removal of sulfur oxide and nitrogen oxide  
 INVENTOR(S): Yamada, Muneyoshi; Takahashi, Yosuke  
 PATENT ASSIGNEE(S): Tohoku University, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001205050	A2	20010731	JP 2000-15922	200000125
PRIORITY APPLN. INFO.:			JP 2000-15922	200000125

L38 ANSWER 95 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Significant hydrogen production (0.33 mol% in products) from H2O splitting by atmospheric dielec. barrier discharges has been achieved with tubular reactors at room temperature Effects of different exptl. parameters, such as different metal (either Ni, Pd, Rh, or Au) coated inner electrodes, types and lengths of outer metal (either Al or Cu) electrodes, grounding states of the inner and outer electrodes, AC peak voltages applied on the reactor, and the flow rate of the feed (2.3 mol% in Ar), have been systematically studied. The water splitting activity varies when the type of metal-coated inner electrodes, peak voltage, the length of outer electrode, and the flow rate of the change, but does not depend on the types of outer metal electrodes and the grounding states of the inner and outer electrodes. (c) 2001 Academic Press.

ACCESSION NUMBER: 2001:499028 CAPLUS  
 DOCUMENT NUMBER: 135:274920  
 TITLE: H2O Splitting in Tubular PACT (Plasma and Catalyst Integrated Technologies) Reactors  
 AUTHOR(S): Chen, Xiao; Suib, Steven L.; Hayashi, Yuji; Matsumoto, Hiroshige  
 CORPORATE SOURCE: Department of Chemistry, University of Connecticut, Storrs, CT, 06269, USA  
 SOURCE: Journal of Catalysis (2001), 201(2), 198-205  
 CODEN: JCTLA5; ISSN: 0021-9517  
 PUBLISHER: Academic Press  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 96 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Simultaneous reduction of carbon dioxide and nitrite ions was studied at gas-diffusion electrodes with various metallophthalocyanine (M-Pc, M: Cr, Mo, Mn, Ru, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, In, Tl, Sn and Pb) catalysts. The formation of urea, CO, formic acid and ammonia at the gas-diffusion electrodes with Group 8-14 catalysts, except for Al and Ge, was found in the simultaneous reduction. The maximum current efficiency of urea formation is .apprx.40% at -1.5 V on Ni-Pc catalysts. The formation of urea at the gas-diffusion electrodes with Group 4-7 catalysts was not found in the simultaneous reduction of CO2 and nitrite. The ability for urea formation with the catalysts depends on the ability for CO and NH3 formation. The catalysts with high ability for CO and NH3 formation could form large amts. of CO-like and ammonia-like precursors.

ACCESSION NUMBER: 2001:498178 CAPLUS  
 DOCUMENT NUMBER: 135:279488  
 TITLE: Electrochemical synthesis of urea at gas-diffusion electrodes Part VI. Simultaneous reduction of carbon dioxide and nitrite ions with various metallophthalocyanine catalysts  
 AUTHOR(S): Shibata, M.; Furuya, N.  
 CORPORATE SOURCE: Faculty of Engineering, Department of Applied Chemistry, Yamaguchi University, Kofu, 400-8511, Japan  
 SOURCE: Journal of Electroanalytical Chemistry (2001), 507(1-2), 177-184  
 CODEN: JECHES; ISSN: 0368-1874  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L38 ANSWER 97 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The catalysts of Mol.0VaNbTeAdOX (A = W, Cr, Ta, Ti, Zr, Hf, Mn, Re, Fe, Ru, Co, Rh, Ni, Pd, Pt, Ag, Zn, B, Al, Ga, In, Ge, Sn, Pb, P, Bi, rare earth elements, alkaline earth metals; a, b, c = 0.01-1.0; d = 0-0.3; x = value defined by each valence of metal) loaded on supports are used in manufacture of the nitriles from alkanes, NH3, and O2 in fluidized bed reactors by gas-phase catalytic oxidation, and the used catalysts are fired at 500-700° in an inert gas atmosphere in the absence of O for reactivation. Thus, MolV0.32Nb0.12Te0.22OX on SiO2 was used in ammoxidn. of propane to give acrylonitrile to show conversion 79.5% and acrylonitrile selectivity 57.9% after 12 h and conversion 78.5% and acrylonitrile yield 50.1% after 2 mo. The used catalyst was fired at 590° in N, and the reactivated catalyst was used in the ammoxidn. to show conversion 82.0% and acrylonitrile selectivity 55.0%.

ACCESSION NUMBER: 2001:403125 CAPLUS  
 DOCUMENT NUMBER: 135:20078  
 TITLE: Activation of ammoxidation catalysts for manufacture of unsaturated nitriles  
 INVENTOR(S): Midorikawa, Hideo; Sugiyama, Naoki  
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001149785	A2	20010605	JP 1999-333056	19991124
PRIORITY APPLN. INFO.:			JP 1999-333056	19991124

L38 ANSWER 98 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Colloidal dispersions of bimetallic alloy nanoclusters of light transition metals like Cu, Ni, Fe and noble metals like Pd, Pt, and Rh were prepared by using ethylene glycol as a reductive solvent and metal hydroxide colloids as metal precursors. Even though the nanoclusters of light transition metals are easily oxidized by oxygen and thus difficult to be handled under practical conditions, the bimetallic alloy nanoclusters containing these light transition metals at high concns. are enough stable under air at room temperature and thus enough easily handled to be used as catalysts for hydration of nitrile to amide (Cu/Pd), reduction of nitro to amino group (Ni/Pd), etc.

ACCESSION NUMBER: 2001:394447 CAPLUS  
 DOCUMENT NUMBER: 134:357883  
 TITLE: Preparation, characterization and catalyses of light-transition-metal/noble-metal bimetallic alloy nanoclusters  
 AUTHOR(S): Toshima, Naoki; Lu, Ping; Wang, Yuan  
 CORPORATE SOURCE: Department of Materials Science and Engineering, Science University of Tokyo in Yamaguchi, Yamaguchi, 756-0884, Japan  
 SOURCE: Studies in Surface Science and Catalysis (2001), 132(Proceedings of the International Conference on Colloid and Surface Science, 2000), 243-246  
 CODEN: SSTMD; ISSN: 0167-2991  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 99 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The title filters are produced by spray coating the surface of gas-permeable filtering base materials with aqueous slurry containing photocatalysts, and then drying the filtering base materials with hot air. The photocatalysts contain semiconductive metal oxides such as TiO2, WO3, ZnO or CeO2, and optionally  $\geq 1$  metals of Pt, Au, Pd, Ni, and/or Co. The gas-permeable filtering base materials are preferably nonwoven activated carbon fiber sheets.

ACCESSION NUMBER: 2001:371383 CAPLUS  
 DOCUMENT NUMBER: 134:371151  
 TITLE: Production of photocatalyst coated filters for waste gas treatment  
 INVENTOR(S): Hioki, Shinya  
 PATENT ASSIGNEE(S): Mitsubishi Paper Mills, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001137661	A2	20010522	JP 1999-321644	19991111
PRIORITY APPLN. INFO.:			JP 1999-321644	19991111

L38 ANSWER 100 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB NH3 is manufactured by a plasma-catalytic process, whereby a N2 and water vapor-containing gas flow is fed through an elec. discharge, whose discharge tube is arranged with a catalyst, which contains a metal selected from Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Mn, and Cu on a catalyst support. As gas discharge is suitable a dielec. hindered discharge with a frequency of 50 Hz-1 MHz, microwave-discharge, corona discharge, or mixed discharges. The gas flow contains water vapor and N2 in a molar ratio of (100:1)-(10:1). The catalyst support consists of titania, alumina, silica, cerium oxide, zirconia, zeolite, or mixts. and mixed oxides with a sp. surface  $> 5$  m<sup>2</sup>/g. The catalyst and the catalyst support is presented as shaped body, whereby the catalytic active components are placed in the surface. The catalyst is deposited as cover coating on the shaped bodies like dielec. ceramic, or glass, optionally organic polymers with an insulation resistance of  $> 10^6 \Omega \cdot \text{cm}$ .

ACCESSION NUMBER: 2001:319472 CAPLUS  
 DOCUMENT NUMBER: 134:328607  
 TITLE: Plasma-catalytic production of ammonia by gas discharge  
 INVENTOR(S): Gieshoff, Jürgen; Lang, Jürgen  
 PATENT ASSIGNEE(S): DMC2 Degussa Metals Catalysts Cerdec A.-G., Germany  
 SOURCE: Eur. Pat. Appl., 8 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1095907	A2	20010502	EP 2000-119056	20000902
EP 1095907	A3	20020327		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19951976	A1	20010510	DE 1999-19951976	19991028
US 6471932	B1	20021029	US 2000-693835	20001023
JP 2001151507	A2	20010605	JP 2000-325435	20001025
PRIORITY APPLN. INFO.:			DE 1999-19951976	A 19991028

L38 ANSWER 101 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB An apparatus for extracting a gas, in particular H2, from a fluid stream utilizing a plate membrane flattened with a wave spring on the low-pressure side of the membrane and a turbulence generator on the high-pressure side. Alternately, the membrane is folded and wrapped against a central conduit within the membrane fold. Extraction membranes have a substrate layer of Ta-W, V-Co, V-Pd, V-Ru, V-Cu, V-Al, Nb-Ag, Nb-Au, Nb-Pt, Nb-Pd, V-Ni-Co, V-Ni-Pd, V-Nb-Pt, and/or V-Pd-Au alloy and a 1st layer affixed to the outer surface of the substrate towards a mixed gas flow which is composed of Pd, Pt, Rh, or Pd alloys.

ACCESSION NUMBER: 2001:302372 CAPLUS  
 DOCUMENT NUMBER: 134:328550  
 TITLE: Hydrogen generator  
 INVENTOR(S): Buxbaum, Robert  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 25 pp., Cont.-in-part of U. S. 5,931,987.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001000380	A1	20010426	US 2000-730180	20001205
US 6461408	B2	20021008		
WO 9717125	A1	19970515	WO 1996-US18131	19961106
W: JP, KR, US RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5931987	A	19990803	US 1997-875046	19970911
US 5888273	A	19990330	US 1997-936665	19970924
US 6183543	B1	20010206	US 1999-359462	19990722
PRIORITY APPLN. INFO.:			US 1995-7297P	P 19951106
			US 1995-7298P	P 19951106
			US 1996-16597P	P 19960508
			US 1996-26918P	P 19960925
			WO 1996-US18131	A2 19961106
			US 1997-875046	A2 19970911
			US 1997-936665	A2 19970924

L38 ANSWER 102 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Bimetallic supported **catalysts** (Pd-Ni/C and Ni-Cu/C) in combination with a phase-transfer **catalyst** were found efficient and selective in the liquid-phase hydrodechlorination of polychlorinated benzenes under mild conditions.  
 ACCESSION NUMBER: 2001:172670 CAPLUS  
 DOCUMENT NUMBER: 135:19402  
 TITLE: Hydrodechlorination of polychlorinated benzenes in the presence of a bimetallic **catalyst** in combination with a phase-transfer **catalyst**  
 AUTHOR(S): Simagina, Valentina I.; Stoyanova, Irina V.  
 CORPORATE SOURCE: G.K. Borekov Institute of Catalysis, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, 630090, Russia  
 SOURCE: Mendeleev Communications (2001), (1), 38-39  
 CODEN: MENCEX; ISSN: 0959-9436  
 PUBLISHER: Russian Academy of Sciences  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 135:19402  
 REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 103 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review, with 45 refs., on advances in organometallic and acid catalysis in industrial processes with focus on recovery from homogeneous systems. Carbonylation of methanol, alkanes and alkenes to produce acetic acid, acetic anhydride, and Me methacrylate using Rh, Ir, Pd, and Co **catalysts** and hydroformylation of olefins to n-butanol and aldehydes using Rh and Co **catalysts** are discussed. Polymerization of olefins using Ti, Zr, Cr, Al, Ni/Al, and Ni **catalysts** is outlined. Hydrocyanuration and oxidation of olefins in manufacture of adiponitrile, acetaldehyde, propylene oxide, adipic acid, terephthalic acid using Ni, Pd/Cu, Mo, Co, and Mn **catalysts** are also discussed. Asym. syntheses from unsatd. compds. to obtain chiral substances, e.g., L-DOEA, L-Menthol, etc., using stereoselective **catalysts** are also described. **Catalyst** recovery strategies, including anchoring to solid supports, catalysis in liquid-liquid phase systems, and homogeneous acid catalysis are outlined.  
 ACCESSION NUMBER: 2001:84531 CAPLUS  
 DOCUMENT NUMBER: 134:253972  
 TITLE: Homogeneous catalysis: industrial applications  
 AUTHOR(S): Marchionna, Mario  
 CORPORATE SOURCE: Shamprogetti SpA, Milan, Italy  
 SOURCE: Chimica e l'Industria (Milan) (2000), 82(8), 823-828  
 CODEN: CINMAB; ISSN: 0009-4315  
 PUBLISHER: Editrice Bias Sas  
 DOCUMENT TYPE: Journal: General Review  
 LANGUAGE: Italian  
 REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 104 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Shaped articles from granular plastics premixed with a catalytic filler are metalized by: (a) alkaline etching of the surface to be coated, to expose the dispersed **catalyst**; (b) acidic treatment of the surface to activate the exposed **catalyst**; and (c) coating the treated surface with a metal in electroless bath. The suitable **catalysts** are powdered phosphides (especially Fe phosphide) optionally mixed with Ag, Pd, Ni, or their compds. The suitable plastics include polyacrylates, ABS, polycarbonates, polystyrene, rubber, nylon, or their blends. The electroless coating is preferably decorative Cu, Ni, Ag, Co, Au, Pd, and/or Sn. Com. polyacrylate copolymer was premixed with 15% of dispersed FeP **catalyst**, and after extrusion molding was etched in aqueous NaOH, activated in aqueous H2SO4 bath, and coated with Cu layer 2-2.5 µm thick in electroless com. bath.  
 ACCESSION NUMBER: 2001:50172 CAPLUS  
 DOCUMENT NUMBER: 134:89652  
 TITLE: Electroless metalization of plastics containing a catalytic filler  
 INVENTOR(S): Hartogs, Matty J.; Pingler, Uwe; Heyer, Joachim; Hendriks, Jan J. M.  
 PATENT ASSIGNEE(S): Enthone-Chi (Benelux) B.V., Neth.  
 SOURCE: Eur. Pat. Appl., 6 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1069209	A1	20010117	EP 1999-202376	19990716
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
WO 2001005518	A1	20010125	WO 2000-US16324	20000712
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CL, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LA, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6706326	B1	20040316	US 2000-673832	20000901
PRIORITY APPLN. INFO.: EP 1999-202376			A 19990716	
			WO 2000-US16324	W 20000712

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 105 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The present invention relates to a method for preparing a CdS photocatalyst (photocatalyst system) used in photolysis of H2O and a method for producing H in the presence of CdS photocatalyst. A method for preparing a CdS photocatalyst m(a)/Cd[M(b)]S, comprising the steps of: dissolving Cd-containing and M-containing compds. in H2O in such an amount that the mol. % of M ranges from 0.001 to 20.00; adding 1 H2S or Na2S as a reactant in the solution with stirring to precipitate Cd[M]S; washing the precipitate with H2O and vacuum-drying the precipitate in a N and thermostat at 105-150 °C for 1.5-3.0 h; doping a liquid m-containing compound to this precipitate in such an amount that the % by weight of m ranges from 0.10 to 5.00. In the formula, m is a dopant metal element as an electron acceptor such as Ni, Pd, Pt, Fe, Ru, Co or an oxidized compound of these metals; a is a percentage by weight of m, ranging from 0.10 to 5.00; M is a promoter selected from the group consisting of V, Cr, Al, P, As, Sb and Pb; b is mol. % of M/(M+Cd), ranging from 0.001 to 20.00. In accordance with a further aspect of the present invention, there is provided a method for producing H, in which visible light adjusted by light filter or sunlight is irradiated onto a suspension of the photocatalyst in H2O to which 0.05-1.00 mol of Na2S (as an electron donor) and 0.05-1.00 mol of Na2SO3 (as a reducing agent) are added.  
 ACCESSION NUMBER: 2000:911148 CAPLUS  
 DOCUMENT NUMBER: 134:78583  
 TITLE: Manufacturing method of CdS photocatalyst for hydrogen production  
 INVENTOR(S): Paik, Dae Chul; Baek, Jin Wook  
 PATENT ASSIGNEE(S): Chonggu Co., Ltd., S. Korea; Korea Research Institute of Chemical Technology  
 SOURCE: PCT Int. Appl., 29 pp.  
 CODEN: PIXXK2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000078450	A1	200001228	WO 2000-KR411	20000501
W: AU, BR, CA, CN, JP, RU, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
KR 2001002898	A	20010115	KR 1999-22953	19990618
AU 722308	B1	20000727	AU 2000-17535	20000216
BR 2000001739	A	20011113	BR 2000-1739	20000222
US 6297190	B1	20011002	US 2000-511324	20000223
CN 1310044	A	20010829	CN 2000-105389	20000225
EP 1127614	A1	20010829	EP 2000-103979	20000225
EP 1127614	B1	20040331		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
RU 2175888	C2	20011120	RU 2000-105077	20000301
CA 2340923	AA	20001228	CA 2000-2340923	20000501

L38 ANSWER 105 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 AB BR 200006818 A 20010605 BR 2000-6818 20000501  
 EP 1113876 A1 20010711 EP 2000-927855 20000501  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI  
 AU 740440 B2 20011101 AU 2000-46169 20000501  
 AU 2000046169 A5 20010109  
 JP 2003502148 T2 20030121 JP 2001-504504 20000501  
 CN 1121271 B 20030917 CN 2000-801431 20000501  
 US 6447650 B1 20020910 US 2001-762293 20010207  
 KR 1999-22953 A 19990618  
 AU 2000-17535 A 20000216  
 WO 2000-KR411 A 20000501

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 106 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB 4-Tert-butoxy-4'-cyanobiphenyl is prepared by reaction of p-Me3COC6H4A  
 (A = Mg, Li; Z = Cl, Br, I) with ≥1 compds. selected from Zn,  
 B, Si, or Sn compds. and cross-coupling reaction of (p-Me3COC6H4)mMn-m  
 (M = Zn, B, Si, Sn; X = halo, alkoxy, OH, carbonyl; 1 ≤ m  
 ≤ n; n = 2-4) with p-YC6H4CN (Y = Cl, Br, I, triflate) in the  
 presence of Pd, Ni, or Pd-Ni  
 catalysts. 4-Tert-butoxychlorobenzene was reacted with St bromide  
 and Mg THF under reflux for 4 h, reacted with ZnCl2 in the presence of  
 Me2NCH2CH2NMe2 in THF at room temperature for 1 h, and cross-coupling  
 reaction with 4-bromobenzonitrile in the presence of Pd(PPh3)2Cl2 at 55° for  
 1 h to give 73.6% 4-tert-butoxy-4'-cyanobiphenyl.  
 ACCESSION NUMBER: 2000:869592 CAPLUS  
 DOCUMENT NUMBER: 134:29212  
 TITLE: Preparation of 4-tert-butoxy-4'-cyanobiphenyl and  
 4-hydroxy-4'-cyanobiphenyl as materials for liquid  
 crystals and polymers  
 INVENTOR(S): Hara, Taiji; Eguchi, Hisao  
 PATENT ASSIGNEE(S): Tosoh Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000344727	A2	20001212	JP 1999-359389	19991217
PRIORITY APPLN. INFO.:			JP 1999-85864	A 19990329

OTHER SOURCE(S): CASREACT 134:29212; MARPAT 134:29212

L38 ANSWER 107 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The process comprises hydrofining fraction oil containing x3 weight%  
 and  
 ≥ 50 ppm N by contacting with catalyst at  
 300-450°, 2-30 MPa, LHSV 0.2-5 h-1, and ratio of H2 to oil  
 20-2,000. The catalyst is prepared by loading VIB metal compound,  
 VIII metal compound and F (as aid) on the carrier. The catalyst  
 contains F 0.5-6, VIB metal (W, Mo or Cr) oxide 10-35, and VIII metal  
 (Co,  
 Ni, Pd or Pt) compound 0.5-6 weight%. The carrier is  
 composed of zeolite 1-80 weight%, Al2O3, and heat-resistant oxide,  
 prepared by  
 mixing zeolite and Al compound, calcining by 500-800° under steam for  
 >0.5 h. The heat-resistant oxide is selected from SiO2,  
 Al2O3, amorphous aluminosilicate, ZrO2, TiO2, MgO, ThO2, BeO, B2O3, CdO;  
 and the zeolite from Y zeolite, or mixture of Y zeolite and Z of X  
 zeolite, beta zeolite mordenite zeolite. The cracked product yield is  
 low  
 and the aim product yield high.  
 ACCESSION NUMBER: 2000:851460 CAPLUS  
 DOCUMENT NUMBER: 133:364309  
 TITLE: Process for hydrofining fraction oil in the presence  
 of catalyst  
 INVENTOR(S): Wang, Kui; Kang, Xiaohong; Dong, Weizheng  
 PATENT ASSIGNEE(S): Sinopec, Peop. Rep. China; Fushun Research Institute  
 of Petroleum Processing, Sinopec  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 17 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1250798	A	20000419	CN 1998-120383	19981013
CN 1072704	B	20011010		
PRIORITY APPLN. INFO.:			CN 1998-120383	19981013

L38 ANSWER 108 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Organic Cl compds. (e.g., PCB or dioxin) are removed from polluted  
 groundwaters or soils by decomposition under H2 atmospheric in the  
 presence of  
 hydrogenation catalysts gas in a catalytic reactor comprising  
 means for either refluxing an aqueous medium in the H2 atmospheric or  
 bubbling H2 gas  
 into the aqueous medium to absorb Cl2 formed during dechlorinating the  
 organic  
 compound under mild conditions. The hydrogenation catalysts  
 contain Pt, Pd, Ni, Ru, Rh, Zn and/or their  
 oxides on porous supports such as activated carbon, alumina or zeolites.  
 The aqueous medium may contain an alkali compound such as NaOH, KOH,  
 Mg(OH)2,  
 Na2CO3, NaHCO3, KHCO3, K2CO3, or NH3, and ≤20 volume% of a water-soluble  
 organic solvent such as acetone or MeOH. The method extends the service  
 life  
 of the hydrogenation catalysts and prevents corrosion in the  
 process pipings.  
 ACCESSION NUMBER: 2000:842081 CAPLUS  
 DOCUMENT NUMBER: 134:9119  
 TITLE: Method of decomposing organochlorine compounds in  
 polluted water or soils  
 INVENTOR(S): Sekiguchi, Yoshitoshi; Sasaki, Kunio; Tanaka, Shingo;  
 Kishida, Hisanori  
 PATENT ASSIGNEE(S): Hitachi Zosen Corporation, Japan  
 SOURCE: PCT Int. Appl., 16 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000071472	A1	20001130	WO 2000-JP3082	20000512
W: JP, KR, US				
RW: DE, FR, GB				
EP 1106579	A1	20010613	EP 2000-927760	20000512
R: DE, FR, GB				
PRIORITY APPLN. INFO.:			JP 1999-138627	A 19990519
			WO 2000-JP3082	W 20000512

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 109 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB This air deodorization apparatus is for circulating air in a space and removing malodorous components from the air and comprises an air purification means having a photocatalyst layer formed by applying a coating material containing photocatalyst bearing a different metal to a substrate, a light source for radiating light rays to the air purification means, and a humidity control means for controlling the humidity of the air. The photocatalyst may be Ti, W, Mo, Si, In, Cd, Ga, Cr, Pb, Sn, their compds., alloys, and/or oxides and bear Cu, Ag, Fe, Co, Pt, Ni, Pd, Au, and/or their oxides; and zeolites, silica gel, activated C, etc. may also be employed as an adsorbent for the apparatus. The photocatalyst may preferably be TiO<sub>2</sub>. The deodorization capability of the apparatus is heightened by heightening the decomposition reactivity of the photolysis catalyst.

ACCESSION NUMBER: 2000:817190 CAPLUS  
 DOCUMENT NUMBER: 133:354397  
 TITLE: Air deodorization apparatus  
 INVENTOR(S): Ohbori, Shinichi  
 PATENT ASSIGNEE(S): Sharp Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000317269	A2	20001121	JP 1999-128616	19990510
PRIORITY APPLN. INFO.: JP 1999-128616 19990510				

L38 ANSWER 110 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Title only translated.  
 ACCESSION NUMBER: 2000:749452 CAPLUS  
 DOCUMENT NUMBER: 133:283256  
 TITLE: Hydrogenation of vegetable oils and fats in the presence of nickel, palladium, platinum, copper, chromium or cobalt catalyst supported on chopped amorphous fibers  
 INVENTOR(S): Barelko, V. V.; Yuranov, I. A.; Fomin, A. A.; Serdyukov, S. I.; Komarov, N. V.; Baturin, S. M.; Borowiak, Marek; Waliszewicz-Nedobalska, Wieslawa  
 PATENT ASSIGNEE(S): Russia  
 SOURCE: Russ. From: Izobreteniya 1998, (11), 235-6.  
 CODEN: RUXXE7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Russian  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2109039	C1	19980420	RU 1997-103014	19970305
PRIORITY APPLN. INFO.: RU 1997-103014 19970305				

L38 ANSWER 111 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A Monte-Carlo (MC) simulation procedure was developed where the pair bond energies are allowed to take into account the various coordination nos. of surface atoms and the presence of adsorbates. The pair bond energies are calculated from partial bond energies of atoms which, in turn, are calculated from modified tight binding model in the 2nd moment approximation. The model was applied to study the role of adsorption of hydrogen, oxygen, CO and nitric oxide on the surface composition and surface bond geometry of bimetallic Pd-X (X = Ag, Cu, Ni, Pt) nanoparticles having face centered cubic cubo-octahedral geometry with 586 atoms. The results are compared with the known exptl. results. Importance of the results in studying reactions on supported bimetallic catalysts was highlighted.

ACCESSION NUMBER: 2000:743587 CAPLUS  
 DOCUMENT NUMBER: 134:62151  
 TITLE: Spatial distribution of atoms in gas-covered Pd-X nanoparticles (X = Ag, Cu, Ni, Pt)  
 AUTHOR(S): Menon, Mahesh; Khanra, Badal C.  
 CORPORATE SOURCE: Condensed Matter Physics Group, Saha Institute of Nuclear Physics, Calcutta, 700 064, India  
 SOURCE: International Journal of Modern Physics B (2000), 14(16), 1683-1692  
 CODEN: IJPBEB; ISSN: 0217-9792  
 PUBLISHER: World Scientific Publishing Co. Pte. Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

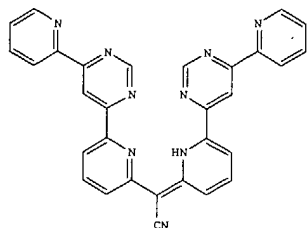
L38 ANSWER 112 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB 2-(4-MeC<sub>6</sub>H<sub>4</sub>)C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>R (R = C1-6 alkyl) were prepared by reaction of 2-(R1SO<sub>2</sub>)C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>R (R1 = (perfluorinated) alkyl, (substituted) aryl) with 4-MeC<sub>6</sub>H<sub>4</sub>ZnX (X = Cl, Br, Iodo) in the presence of a Pd(0) or Ni(0) catalyst. Thus, a mixture of Pd tris(dibenzylideneacetone) and diphenylphosphinoferrocene in THF at 40° was treated with Me 2-[1-(perfluorobutane)sulfonyloxy]benzoate; after 1 h the mixture was added to a suspension of p-tolylzinc bromide in THF (preparation given) followed by reflux for 23 h to give 50% Me 2-(4-methylphenyl)benzoate.

ACCESSION NUMBER: 2000:741018 CAPLUS  
 DOCUMENT NUMBER: 133:296278  
 TITLE: Preparation of 2-(4-methylphenyl)benzoates from 2-sulfonyloxybenzoates and arylzinc compounds.  
 INVENTOR(S): Castaldi, Graziano; Tarquini, Antonio; Rossi, Renzo  
 PATENT ASSIGNEE(S): Dinamite DiPharma S.p.A., Italy  
 SOURCE: Eur. Pat. Appl., 14 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1044956	A1	20001018	EP 2000-107451	20000406
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
IT 99MI0749	A1	20001013	IT 1999-MI749	19990413
US 1311920	B1	20020320		
US 6433214	B1	20020813	US 2000-541951	20000403
CA 2305050	AA	20001013	CA 2000-2305050	20000412
JP 2000336066	A2	20001205	JP 2000-110749	20000412
PRIORITY APPLN. INFO.: IT 1999-MI749 A 19990413				

OTHER SOURCE(S): CASREACT 133:296278; MARPAT 133:296278  
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT





AB The authors describe allosteric regulation of a synthetic metal-based catalyst for phosphodiester cleavage. Two functional metal ions (denoted M) are exposed for direct interaction with the substrate while reactivity is modulated by a 3rd structural metal. The ligand L was prepared and characterized by x-ray crystallog. [(L-H)M]NO<sub>3</sub> (M = Cu, Ni, Pd), in which M is situated in the tetradentate binding site, were prepared. Although catalytic activity of [(L-H)M]NO<sub>3</sub>

(M = Cu, Ni, Pd) towards cleavage of (p-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>O)(HOCHMeCH<sub>2</sub>O)PO<sub>2</sub>- (HPNP) was very low, addition of Cu<sup>2+</sup> ions caused a dramatic increase. The pH rate profile for [(L-H)Cu<sup>2+</sup>]<sub>3</sub> solns. has a maximum at pH 7, the reaction is 1st order in complex concentration (range 0.5-3 + 10-4 M) and 1st order in HPNP (substrate) concentration (10-4-10-3 M). At least two catalytic turnovers without loss of activity were detected for a HPNP concentration of 2.5 mM and a complex concentration of 10-4 M.

ACCESSION NUMBER: 2000:733753 CAPLUS  
DOCUMENT NUMBER: 134:26876  
TITLE: Allosteric regulation of artificial phosphoesterase activity by metal ions  
AUTHOR(S): Fritsky, Igor O.; Ott, Reina; Kramer, Roland  
CORPORATE SOURCE: Dipt.-Chem., Univ. Heidelberg, Heidelberg, 69120, Germany  
SOURCE: Angewandte Chemie, International Edition (2000), 39(18), 3255-3258  
CODEN: ACIEF5; ISSN: 1433-7851  
Wiley-VCH Verlag GmbH  
PUBLISHER: Journal  
DOCUMENT TYPE: English  
LANGUAGE: English  
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

AB The catalysts which are used in the gas-phase ammoxidn. of, e.g., propane and isobutane with NH<sub>3</sub> and O to corresponding unsatd. nitrile compds., are compds. MolVpXqNbryzZtOn (X = Te or Sb; Y = Ce or and La; X = Ti, W, Cr, Ta, Zr, Y, Yb, Sn, Bi, Hf, Mn, Re, Fe, Ru, Co, Rh, Ni, Pd, Pt, Ag, Zn, B, Al, Ga, In, Ge, Pb, P, Pr, Nd, Sm, Gd, Fm, Eu, Tb, Dy, Ho, Er, Tm, Lu or alkali metals; p, q, r, s, t, n = the ratio of element per 1 Mo atom where p = 0.1-0.6, q = 0.01-0.6, r = 0.01-0.6, s = 0.001-0.3 and t = 0-1; n =

number for O corresponding to the oxidation number of metal elements concerned) supported on 20-60% silica.

ACCESSION NUMBER: 2000:501530 CAPLUS  
DOCUMENT NUMBER: 133:135711  
TITLE: High-activity silica-supported ammoxidation catalysts and their use in manufacture unsaturated nitrile compounds  
INVENTOR(S): Hinako, Hidenori; Yano, Hiroyuki  
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000202293	A2	20000725	JP 1999-11043	19990119
PRIORITY APPLN. INFO.:				

RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

AB The title substrate contains photocatalytic layers from paints consisting of (1) primary photocatalytic powders from photocatalytic core powders carrying fine powders of metal or its oxide, which does not have photocatalytic property, (2) secondary photocatalytic powders with adsorption property, and (3) binders. The core powder may contain Ti, W, Mo, Si, In, Cd, Ga, Cr, Pb, Sn, their alloy, and/or their oxide. The finer powder may contain Cu, Ag, Fe, Co, Pt, Ni, Pd, Au, and/or their oxide. The substrate may contain adsorbents from SiO<sub>2</sub> gel, silicalite, activated C, and/or (metal-exchanged) zeolites. The binder may contain silicone polymer, fluoro polymer, colloidal silica, SiO<sub>2</sub>, or TiO<sub>2</sub>. The binder may contain solid basic substances such as CaO, CaCO<sub>3</sub>, K<sub>2</sub>O, and/or NaOH. The title apparatus has UV irradiation step to the substrates. The substrate and the apparatus

are useful for deodorization of tobacco smoke, exhaust gases, and air.  
ACCESSION NUMBER: 2000:657791 CAPLUS  
DOCUMENT NUMBER: 133:226971  
TITLE: Substrates and apparatus for decomposition of toxic or odor gases  
INVENTOR(S): Ohori, Shinichi  
PATENT ASSIGNEE(S): Sharp Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000254449	A2	20000919	JP 1999-65452	19990311
PRIORITY APPLN. INFO.:				

RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

AB This review with 53 refs. summarizes recent results in atomic-level simulations and calcs. on the structural properties of nanometer scale binary clusters of transition metals. Such bimetallic clusters, primarily

via the functions of their exposed surface atoms, are widely used as heterogeneous catalysts in the industry. Theor. techniques employed include mol. dynamics and Monte Carlo simulations and their hybridization, multiple-state statistical-mech. modeling, and numerical solns. for the minimization of the free energy. The focus is on the surface segregation profiles of small (201-atom) bimetallic catalysts. Also reviewed is the structural stability of very small (13-atom) pure metal clusters and much larger bimetallic catalysts of sizes up to 10,000 atoms and 6 nm in diameter, existing in noncryst. and different (truncated) crystallog. phases. Among the bimetallic combinations of Pt, Rh, Ni, Pd, Cu, and Ag, a system (Cu-Pd) that exhibits very weak surface segregation is chosen to illustrate the reverse surface segregation phenomenon: the surface depletion of an element (Cu), which normally enriches on the surface, at low concns. Simulations verify that the reverse surface segregation, recently observed in expts., can

be driven by the exothermic formation of alloys at the core. The issues of structural metastability and the influence of the environment are discussed in the context of recent IR, extended X-ray absorption fine structure (EXAFS), NMR, and X-ray diffraction expts. on real catalysts.

ACCESSION NUMBER: 2000:495550 CAPLUS  
DOCUMENT NUMBER: 133:213793  
TITLE: Surface composition and structural stability of bimetallic catalysts  
AUTHOR(S): Yang, Liguo  
CORPORATE SOURCE: Ames Laboratory, United States Department of Energy and Iowa State University, Ames, IA, 50011, USA  
SOURCE: Current Topics in Catalysis (1999), 2, 59-71  
CODEN: CTCTFP  
PUBLISHER: Research Trends  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English  
REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE

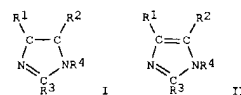
FORMAT

L38 ANSWER 117 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB (meth)acrylonitrile is manufactured by gas-phase ammoxidn. of propane or isobutane in the presence of MoVpXqNbZrSgZn (X = Te and/or Sb; Z = Ti, W, Cr, Ta, Sn, Y, Yb La, Ce, Bi, Hf, Mn, Re, Fe, Ru, Co, Rh, Ni, Pd, Pt, Ag, Zn, B, Al, Ga, In, Ge, Pb, P, Fe, Nd, Sm, Gd, Fm, Eu, Tb, Dy, Ho, Er, Tm, Lu, alkaline earth metal; 0.1 ≤ p ≤ 0.6; 0.01 ≤ q, r ≤ 0.6; 0.001 ≤ s ≤ 0.3; 0 ≤ t ≤ 1; n = number defined by the oxidation number of the constituting metals) supported on 20-60% SiO<sub>2</sub>. The catalysts are easily prepared by spray drying solns. containing the catalyst components, then burning at 500-700° under O-free gas. A gaseous mixture of propane, NH<sub>3</sub>, O, and He was passed through a fixed bed packed with MoV<sub>0.33</sub>Nb<sub>0.11</sub>Te<sub>0.22</sub>Zr<sub>0.05</sub>Sn supported on 30% silica at 415° and 1 atm with contact time 4.1 s-g/cc to give 53.5% acrylonitrile.

ACCESSION NUMBER: 2000:427997 CAPLUS  
 DOCUMENT NUMBER: 133:43945  
 TITLE: Ammoxidation catalysts and manufacture of (meth)acrylonitrile from propane or isobutane  
 INVENTOR(S): Inoue, Tomoya; Minako, Hidenori  
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000178242	A2	20000627	JP 1998-354398	19981214
PRIORITY APPLN. INFO.:			JP 1998-354398	19981214

L38 ANSWER 118 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



AB Title compds. I (R1-R4 = aliphatic, aromatic aliphatic, alicyclic, or aromatic group residue, H) are prepared from imidazolines II (R1-R4 = same as I) using Ni and Pd catalysts. 2-Methylimidazoline was dehydrogenated in the presence of Ni included in stearylamine and Pd/C at 180° for 9 h to give 93.4% 2-methylimidazole.

ACCESSION NUMBER: 2000:426884 CAPLUS  
 DOCUMENT NUMBER: 133:43524  
 TITLE: Preparation of imidazoles  
 INVENTOR(S): Aoki, Masahiro; Hara, Yasushi  
 PATENT ASSIGNEE(S): Tosoh Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000178256	A2	20000627	JP 1998-357437	19981216
PRIORITY APPLN. INFO.:			JP 1998-357437	19981216

OTHER SOURCE(S): CASREACT 133:43524; MARPAT 133:43524

L38 ANSWER 119 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Composite metal oxides having a general formula Mol.OVaTebSbu-bXx(NH4)yOn where x is selected from Ti, Zr, Nb, Ta, Cr, W, Mn, Fe, Ru, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Zn, In, Sn, Pb, Ce, and Bi, 0.01 ≤ a < 1.0, 0 ≤ b ≤ a, 0 ≤ x < 1.0, 0.01 ≤ y/(1+y) ≤ 1.0 req. 0.50, 0 ≤ y ≤ (1-a+x), and n is the oxidation state of the metal element are manufactured by thermal hydrolysis of solution mixture of source compds. and firing the reaction product at >350°. The compound is used as catalyst in the manufacture of nitrile by ammoniation-oxidation and in the manufacture of α- and β-unsatd. carboxylic acids from alkanes with excellent selectivity and activity.

ACCESSION NUMBER: 2000:344358 CAPLUS  
 DOCUMENT NUMBER: 132:349756  
 TITLE: Manufacture of composite metal oxide for catalyst  
 INVENTOR(S): Koyasu, Sachio; Watanabe, Akira  
 PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000143244	A2	20000523	JP 1999-10263	19990119
PRIORITY APPLN. INFO.:			JP 1998-209285	A 19980724
			JP 1998-244472	A 19980831

L38 ANSWER 120 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Basic principles and structural requirements for an efficient transition metal catalyzed atom transfer radical polymerization (ATRP) will be discussed. Major requirement for ATRP is that the catalytic system is highly selective, efficient, dynamically changing between two oxidation states, robust and inexpensive. The catalytic system consists of metal, ligand and may include some counterions. Ideally, transition metal complex should be involved in the one-electron oxidation process and it should exclusively and reversibly transfer halogen atoms. In principle, late transition metals are preferred but early and middle transition metals have also been used. They include compds. from group 7 (Re), 8 (Fe, Ru), 9 (Rh), 10 (Ni, Pd) and 11 (Cu), but this list may be easily expanded. Ligands are perhaps the most important components of the ATRP catalyst. They fine tune transition metal redox properties, provide appropriate selectivity by the steric effects and often assure sufficient solubility in the reaction mixture.

Ligands should complex strongly, unless catalytic activity requires their dissociation from the coordination sphere and should allow its expansion to accept halogen atom from the dormant species. Best ligands for Cu-based ATRP include polydentate and branched amines such as pentamethyldiethylenetriamine and methylated TREN. Such ligands provide fast and efficient ATRP for a large variety of monomers.

ACCESSION NUMBER: 2000:334444 CAPLUS  
 TITLE: Transition-metal-catalyzed atom-transfer radical polymerization.  
 AUTHOR(S): Matyjaszewski, Krzysztof  
 CORPORATE SOURCE: Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA, 15213, USA  
 SOURCE: Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000 (2000), POLY-263. American Chemical Society: Washington, D. C.  
 CODEN: 69CIAC  
 DOCUMENT TYPE: Conference; Meeting Abstract  
 LANGUAGE: English

L38 ANSWER 121 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Radical addition reactions of organyl iodides onto [1.1.1]propellane (I) followed by halogen-lithium exchange and transmetalation with zinc chloride, as well as addns. of Grignard reagents to I, have furnished a variety of 3-substituted bicyclo[1.1.1]pentyl-1-magnesium and -zinc derivs. The latter have been coupled with various alkenyl, aryl, and biaryl halides and triflates under NiCl<sub>2</sub>dppf, Pd(PPh<sub>3</sub>)<sub>4</sub>, or PdCl<sub>2</sub>(dppf) catalysis to give a number of 1,3-disubstituted bicyclo[1.1.1]pentyl derivs., several of which exhibit liquid crystalline properties, in moderate to very good yields. The coupling products have been further transformed to yield bicyclo[1.1.1]pentyl derivs. bearing alkynyl, cyano, and/or alkenyl groups.

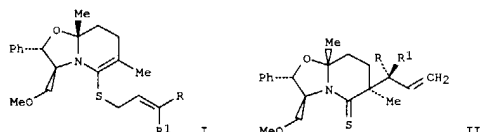
ACCESSION NUMBER: 2000:243702 CAPLUS  
 DOCUMENT NUMBER: 133:17225  
 TITLE: Nickel- and palladium-catalyzed cross-coupling reactions at the bridgehead of bicyclo[1.1.1]pentane derivatives - a convenient access to liquid crystalline compounds containing

bicyclo[1.1.1]pentane moieties  
 AUTHOR(S): Messner, Matthias; Kozhushkov, Sergei I.; De Meljere, Alain  
 CORPORATE SOURCE: Institut für Organische Chemie der George-August-Universität Göttingen, Göttingen, 37077, Germany  
 SOURCE: European Journal of Organic Chemistry (2000), (7), 1137-1155  
 CODEN: EJOCFK; ISSN: 1434-193X  
 WILEY-VCH Verlag GmbH  
 PUBLISHER: Journal  
 DOCUMENT TYPE: English  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 133:17225  
 REFERENCE COUNT: 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 122 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Gas-phase amination of cyclohexanone (I) and 9:1 (by weight) cyclohexanol-1 over a Cu, Ni or Group VIII metal (Ni, Pd, Ru, Rh, Pt)-containing catalyst was studied in a continuous fixed-bed reactor. Cyclohexylamine was the main product (593% selectivity) at 5250° and atmospheric pressure; at higher temps., the major product was PhNH<sub>2</sub> (596% selectivity). The selectivity was strongly influenced by mass-transfer limitations. The reaction path and rates were studied.

ACCESSION NUMBER: 2000:200592 CAPLUS  
 DOCUMENT NUMBER: 132:347261  
 TITLE: Amination of cyclohexanone and cyclohexanol/cyclohexanone in the presence of ammonia and hydrogen using copper or a Group VIII metal supported on a carrier as the catalyst  
 AUTHOR(S): Becker, J.; Niederer, J. P. M.; Keller, M.; Holderich, W. F.  
 CORPORATE SOURCE: Worringer Weg 1, Department of Chemical Technology and Heterogeneous Catalysis, University of Technology Aachen, Aachen, 52074, Germany  
 SOURCE: Applied Catalysis, A: General (2000), 197(2), 229-238  
 CODEN: ACAGE4; ISSN: 0926-860X  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 123 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
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AB Pd, Ni, and Lewis acid catalyzed rearrangements occur under milder conditions than the thermal version of the titled rearrangements. Nonracemic allyl lactam thioethers I (R = Ph, Me; R1 = H, Me) undergo [3,3] sigmatropic rearrangement at 25-65° in the presence of nickel, palladium, and Lewis acid catalysts to give nonracemic allylated lactams II in 46-70% yield and with exo/endo stereoselectivities of up to >20:1. E.g., I (R = R1 = Me) was treated with Ni(1,5-cyclooctadiene)<sub>2</sub> at 65° to give II in 70% yield and with an exo/endo stereoselectivity of >20:1. II undergo equilibration under thermal rearrangement conditions (140°, xylenes) to give the exo diastereomers II with high stereoselectivity.

ACCESSION NUMBER: 2000:170491 CAPLUS  
 DOCUMENT NUMBER: 132:334378  
 TITLE: Palladium and nickel catalyzed thio-Claisen rearrangements of chiral bicyclic thiolactams (via N,S-ketene acetals)  
 AUTHOR(S): Watson, Daniel J.; Devine, Paul N.; Meyers, A. I.  
 CORPORATE SOURCE: Department of Chemistry, Colorado State University, Fort Collins, CO, 80523, USA  
 SOURCE: Tetrahedron Letters (2000), 41(9), 1363-1367  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 132:334378  
 REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 124 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Styrene is prepared by dehydrogenation of ethylbenzene in the presence of catalyst at 550°-650° and pressure from ordinary to -0.07 MPa with water/ethylbenzene of 0.6-2.5, liquid space velocity of 0.3-1.0 h<sup>-1</sup>, wherein the catalyst comprises Fe<sub>2</sub>O<sub>3</sub> 40-70, K<sub>2</sub>O 10-40, MoO<sub>3</sub> 0-5, MgO 0.05-5, metal oxide selected from Cu, Zn, Sc, Ti, W, Mn, Ni, Pd, Al, P, Si, B, Sn, Pb, Sb 0.001-5 parts, and 22 rare-earth oxide 2-15 parts (on the basis of oxide).

ACCESSION NUMBER: 2000:102944 CAPLUS  
 DOCUMENT NUMBER: 132:108445  
 TITLE: Preparation of styrene by dehydrogenation of ethylbenzene  
 INVENTOR(S): Yuan, Yiting; Fan, Qin; Mao, Liansheng; Xu, Yongfan; Yang, Wei  
 PATENT ASSIGNEE(S): Shanghai Petrochemical Inst., Sinopec, Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1180687	A	19980506	CN 1996-116541	19961022
CN 1055076	B	20000802		
PRIORITY APPLN. INFO.:			CN 1996-116541	19961022

L38 ANSWER 125 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Adsorption of complexes (NOX) on the Cu(III), Ag(III), Ni(III), Pd(III) and Pt(III) metal surfaces has been studied theor. by using ASED-MO method. The results indicate that among the above five metals, Pt has the strongest catalytic activity for the reduction of NOX to N2 while purifying the tailpipe gases, and the catalytic reaction mechanism is as follows: NO mol. is firstly adsorbed on the surface of Pt, then N-O bond breaks and becomes two isolated N and O atoms. These two atoms can be easily desorbed from the surface of Pt, and two free N atoms are likely to form a N2 mol.

ACCESSION NUMBER: 1999:782055 CAPLUS  
 DOCUMENT NUMBER: 132:98564  
 TITLE: Theoretical study on adsorption and desorption of N- and O-containing complexes on Cu, Ag, Ni, Pd and Pt metal surfaces  
 AUTHOR(S): Du, Zhiqiang; Chen, Wanxi; Xu, Zhude; Chen, Genhua  
 CORPORATE SOURCE: Department of Chemistry, Zhejiang University, Hangzhou, 310027, Peop. Rep. China  
 SOURCE: Huaxue Wuli Xuebao (1999), 12(5), 633-640  
 CODEN: HWXUE4; ISSN: 1003-7713  
 PUBLISHER: Kexue Chubanshe  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese

L38 ANSWER 127 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The catalyst consists of active metal components (Pt, Ni, Pd, Co, Cu, and their water-soluble salts), promoter (soluble salts of group IIIA or group IVA), and carrier (acid cation exchange resin). The promoter is loaded on the carrier by impregnation and ion exchange. The catalyst can be used for etherification or selective hydrogenation of olefin (C3-7) or C5 fraction and alc. The catalyst has high stability, long service life, high selective hydrogenation, and isomerization activity. Thus, a palladium catalyst (0.26% Pd) prepared by dissolving palladium nitrate dihydrate 150.3 mg in distilled water 100 mL, adding strong acid large pore cation exchange resin (854) 58 mL and soaking for 2 h, washing with distilled water till receiving neutral filtrate, and drying was sampled (13 mL) as the catalyst for the reactions of this invention at 70°, liquid space velocity 6.0 h-1 and hydrogen flow rate 6.0-8.0 mL/min, and showed 3-methyl-1-butene 1.47, 2-methyl-1-butene 1.54, and 2-methyl-2-butene 9.83 weightt after 4 h, compared to 1.97, 12.21, and 14.50, resp. before the reaction.

ACCESSION NUMBER: 1999:754541 CAPLUS  
 DOCUMENT NUMBER: 131:323046  
 TITLE: Preparation of olefin-etherification catalyst comprising active metal, promoter, and acid cation exchange resin  
 INVENTOR(S): Huang, Xingliang; Yin, Huiling; Yao, Zhilong; Liu, Mingjiu; Gao, Buliang; Liu, Yuan  
 PATENT ASSIGNEE(S): Qilu Petrochemical Co., Peop. Rep. China  
 SOURCE: Faming Zhuanni Shenqing Gongkai Shuomingshu, 7 pp. CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1146927	A	19970409	CN 1996-109509	19960821
CN 1051478	B	20000419		
PRIORITY APPLN. INFO.:			CN 1996-109509	19960821

L38 ANSWER 126 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Elec. devices containing insulating oils with PCB (PCBs+PCTs+PCBTs) concns. of >50 mg/kg are classified as PCB-contaminated devices according to the recent European Directive (Number 59/96 issued on 16 Sept. 1996). The directive sets forth requirements for decontamination of transformers, fluids and equipment. An innovative process was developed that meets the requirements of the directive. The process relies on a continuous chemical dehalogenation technol. that was termed CDP Process. The reagent is comprised of a mixture of non-alkali metal catalyst, a polyalkyleneglycol or Nixolen, an alkali metal hydroxide or an alcoholate. Several combinations of nonalkali metal catalysts were evaluated, including Fe, Mg, Al, Pd, Ni, Zn, and Ti. Equipments with a capacity of <50,000 kg of insulating oil and PCB contamination levels of 2000 mg/kg were treated, the PCB concentration was reduced to <25 mg/kg. The process reduces the concentration of PCBs/PCTs/PCDFs/PCDDs in insulating fluids well below the requirements and thus renders the equipment PCB free.

ACCESSION NUMBER: 1999:773292 CAPLUS  
 DOCUMENT NUMBER: 132:5991  
 TITLE: A continuous technology for decontamination of electrical equipment through dechlorination of PCBs/PCTs/PCDFs/PCDDs in insulating oil. CDP process applications  
 AUTHOR(S): Tumlati, W.; Porciani, A.; Actis, R.; Kapila, S.; Nam, P.  
 CORPORATE SOURCE: Sea Marconi Technologies, Collegno, I-10093, Italy  
 SOURCE: Organohalogen Compounds (1999), 40, 571-575  
 CODEN: ORCOEP; ISSN: 1026-4892  
 PUBLISHER: ECO-INFORMA Press  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 128 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Catalyst compns. are disclosed which are useful for the hydroxylation and the amination of aromatic hydrocarbons using mol. oxygen as terminal oxidant. The catalysts comprise a support selected from the group consisting of metal oxides, mol. sieves, zeolites and clays; transition metal selected from the group consisting of vanadium, niobium, copper, palladium, nickel and silver, and combinations thereof; and at least one multidentate chelating, binucleating ligand. The catalysts may further comprise addnl. metal ions. The process is particularly suited, for example, to the one-step conversion of benzene to phenol and of benzene to aniline.

ACCESSION NUMBER: 1999:718946 CAPLUS  
 DOCUMENT NUMBER: 131:338595  
 TITLE: Catalysts for hydroxylation and amination of aromatics using molecular oxygen as the terminal oxidant without coreductant  
 INVENTOR(S): Durante, Vincent A.; Wijesekera, Tilak P.; Karmakar, Swati  
 PATENT ASSIGNEE(S): Sunoco, Inc. (R&M), USA  
 SOURCE: U.S., 10 pp. CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5981424	A	19991109	US 1997-903983	19970731
PRIORITY APPLN. INFO.:			US 1997-903983	19970731

REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 129 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The polycarbometallane has a backbone repeat unit containing 22 metal atoms bonded to each other and one ethylenically unsatd. functional group, wherein the backbone repeat unit is preferably - C(R3):C(R3)[C(R3)(R4)]n[M(R1)(R2)]a[C(R3)(R4)]p- (n = 0-4; a ≥2; p = 0-4; R1, R2 = H, halogen, C5-8 alkyl, C5-8 alkenyl or aromatic having one ring; R3, R4 = H, C5-8 alkyl; and M = metal atom selected from Zr, Sn, Ge, Pb, Hg, Ni, Pd, Pt, Cr, Fe, Co, Cu and Mn). The polymer has ≥20 wt% metal, preferably ≥50 wt% metal based on the weight of the polymer. The polycarbometallane is prepared via acyclic diene metathesis polymerization of a telechelic polymetallane diene (e.g., a mixture of 6,6-dibutyl-6-stanna-1,10-undecadiene, 6,6,7,7-tetrabutyl-6,7-distanna-1,11-dodecadiene and 6,6,7,7,8,8-hexabutyl-6,7,8-tristanna-1,12-tridecadiene) catalyzed by an olefin metathesis catalyst based on an organometallic complex of transition metal (e.g., bis[1,1-di(trifluoromethyl)ethoxy][(2,6-dipropylphenyl)imino](2-methyl-2-phenylpropylidene)molybdenum].

ACCESSION NUMBER: 1999:708815 CAPLUS  
 DOCUMENT NUMBER: 131:323076  
 TITLE: Polycarbometallane and its preparation  
 INVENTOR(S): Abbey, Kirk J.; Gomez, Fernando J.; Wagener, Kenneth B.  
 PATENT ASSIGNEE(S): Lord Corporation, USA  
 SOURCE: PCT Int. Appl., 20 pp.  
 CODEN: FIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9955758	A1	19991104	WO 1999-US8500	19990423
W: CA, CN, JP, RU				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2329720	AA	19991104	CA 1999-2329720	19990423
EP 1073687	A1	20010207	EP 1999-919885	19990423
EP 1073687	B1	20040211		
R: DE, GB, SE, FI				
US 6340731	B1	20020122	US 1998-298288	19990423
JP 2002513053	A1	20020508	JP 2000-545914	19990423
US 2002061992	A1	20020523	US 2001-26025	20011221
US 6545110	B2	20030408		
PRIORITY APPLN. INFO.:			US 1998-82963P	P 19980424
			US 1999-298288	A3 19990423
			WO 1999-US8500	W 19990423

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 131 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The addition of Bu4NI was found to accelerate the palladium(0)-catalyzed cross-coupling between benzylic zinc bromides and aryl or alkenyl triflates. Remarkably, it further allows a new nickel(0)-catalyzed cross-coupling between functionalized benzylic zinc reagents and primary alkyl iodides leading to polyfunctional products in good yields under mild reaction conditions (0-20 °C, 4-16 h).

ACCESSION NUMBER: 1999:629697 CAPLUS  
 DOCUMENT NUMBER: 132:22563  
 TITLE: New Efficient Nickel- and Palladium-Catalyzed Cross-Coupling Reactions Mediated by Tetrabutylammonium Iodide  
 AUTHOR(S): Piber, Michael; Jensen, Anne Egg; Rottlaender, Mario; Knochel, Paul  
 CORPORATE SOURCE: Institut fuer Organische Chemie, Ludwig-Maximilians-Universitaet Muenchen, Munich, 81377, Germany  
 SOURCE: Organic Letters (1999), 1(9), 1323-1326  
 CODEN: ORLEF7; ISSN: 1523-7060  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 132:22563  
 REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS  
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 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 130 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Alkylation of aromatic compds. with an olefin or alkyl halide having 1-24 C atoms uses a novel catalyst comprising (a) a refractory inorg. oxide, (b) the reaction product of a first metal halide and bound surface hydroxyl groups of the refractory inorg. oxide, (c) a second metal cation, and (d) optionally a zerovalent third metal. The refractory inorg. oxide is selected from alumina, TiO2, zirconia, chromia, SiO2, boria, SiO2-alumina, and combinations and (b) metal halide is a fluoride, chloride, or bromide of Al, Ga, Zr, or B. The (c) metal cation is selected from 0.0026-0.20 g atoms/100 g refractory inorg. oxide for Li, K, Ce, Rb, Ag, and Cu, and from 0.012-0.20 g atoms for Na; and .apprx.0.0013-.apprx.0.01 g atoms/100 g of refractory inorg. oxide of alkaline earth metal cations Be, Sr, and Ba, and .apprx.0.004-0.1 g atoms/100 g support for Mg and Ca, or combinations. The (d) metal is selected from Pt, Pd, Ni, Ru, Rh, Os and Ir, and any combination. These novel catalysts are effective in other alkylation reactions including motor fuel alkylation.

ACCESSION NUMBER: 1999:635512 CAPLUS  
 DOCUMENT NUMBER: 131:259174  
 TITLE: Monoolefin alkylation of aromatics using a metal cation-modified Friedel-Crafts type catalyst  
 INVENTOR(S): Kocal, Joseph A.; Groskar, Anil R.  
 PATENT ASSIGNEE(S): UOP LLC, USA  
 SOURCE: U.S., 8 pp., Cont.-in-part of U.S. 5,672,797.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5962760	A	19991005	US 1997-905762	19970804
US 5672797	A	19970930	US 1995-533576	19950925
PRIORITY APPLN. INFO.:			US 1993-93150	19930719
			US 1994-265161	19940624
			US 1995-533576	19950925

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 132 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB H2 is manufactured by gas-phase catalytic cracking in a H generator using Pb-free low-S gasoline having 40-200° m.p. as raw material at oil/water ratio 1:(1-1.2) in the presence of catalyst (40-60% Ni/Al2O3, 0.05-0.2% Pt-Pd/Al2O3, or Pd, Ni, K/Al2O3) at 300-760° and 10-40 atmospheric Exhaust heat from engine is utilized in heating raw material. Additive may be added to the water. Alcos. of 40-80° b.p. and ammonium salts of 40-65° b.p. may be used as raw materials. The catalyst is selected from CuO/Al2O3, ZnO/Al2O3, MnO2/Al2O3, Ni,K/Al2O3. The equipment consists of a H generator, pipes, and an engine, superheater chamber closed tube, and reaction chamber. The H generator is directly connected with silencer by pipes, and the superheater chamber is linked with reaction chamber by closed tube.

ACCESSION NUMBER: 1999:614904 CAPLUS  
 DOCUMENT NUMBER: 131:201838  
 TITLE: Manufacture of hydrogen by catalytic cracking and hydrogen generators  
 INVENTOR(S): Dong, Yintan; Xu, Zetao; Dong, Rong  
 PATENT ASSIGNEE(S): Peop. Rep. China  
 SOURCE: Faming Zhuanli Shengqing Gongkai Shuomingshu, 20 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1134912	A	19961106	CN 1996-100965	19960118
CN 1043027	B	19990421		
PRIORITY APPLN. INFO.:			CN 1996-100965	19960118

L38 ANSWER 133 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process is disclosed for the catalytic hydroxylation of aromatic hydrocarbons which comprises contacting aromatic feedstock with oxidant comprising mol. oxygen, under suitable reaction conditions, in the presence of a catalyst comprising three essential components: a support; transition metal selected from the group consisting of vanadium, niobium, copper, palladium, nickel and silver, or combinations thereof, and a promoter comprising a multidentate chelating, binucleating ligand. The catalysts may further comprise addnl. metal ions. The process is particularly suited, for example, to the one-step conversion of benzene to phenol.

ACCESSION NUMBER: 1999:582684 CAPLUS  
 DOCUMENT NUMBER: 131:215851  
 TITLE: Process and catalysts for hydroxylation of aromatics using molecular oxygen as the terminal oxidant without coreductant  
 INVENTOR(S): Durante, Vincent A.; Wijesekera, Tilak P.; Karmakar, Swati  
 PATENT ASSIGNEE(S): Sunoco, Inc., USA  
 SOURCE: U.S., 9 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5952532	A	19990914	US 1997-904168	19970731
PRIORITY APPLN. INFO.:			US 1997-904168	19970731

REFERENCE COUNT: 15  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 134 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Title comps. mainly comprise epoxy resins containing GOC6H4(XZ)nXZ (X = dicyclopentadiene skeleton; Z = glycidoxy-substituted phenylene; n = 0-6),  
 R: H{[QCH2]1(QX)m[QCH2)n]KC6H3R(OH) (Q = phenylene substituted with OH and R = H, Me, OH; 1 ≤ 1 + n ≤ 40; 1 ≤ m ≤ 15; 1 ≤ k ≤ 10) as curing agents, curing accelerators, and 84-93% (calculated as true sp. gr.) fillers. Thus, YX 4000H (biphenyl epoxy resin)  
 15.5, HP 7200 (dicyclopentadiene-type epoxy resin) 15.5, ESB 400T (brominated epoxy resin) 4, XL 225-3L (aralkyl phenolic resin) 6.7, DPP-M (dicyclopentadiene-type phenolic resin) 11.2, FSW 6200 (phenol novolak) 4.5, triphenylphosphine 0.46, 2 PZ (2-phenylimidazole) 0.23, and SiO2 330.7 parts were kneaded and transfer-molded with lead frames made from Cu, alloy 42, and Ni-, Pd-, and Au-plated Cu. The obtained packages showed good resistance to crack and delamination after 168-h storage at 85° and relative humidity 85% and 10-s immersion in a solder bath at 260°.

ACCESSION NUMBER: 1999:556832 CAPLUS  
 DOCUMENT NUMBER: 131:201001  
 TITLE: Dicyclopentadiene-type epoxy resin compositions for moisture- and crack-resistant electronic packages, and semiconductor devices sealed with the compositions  
 INVENTOR(S): Kishiue, Yasuhisa  
 PATENT ASSIGNEE(S): Matsushita Electric Works, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11236490	A2	19990831	JP 1998-40779	19980223
PRIORITY APPLN. INFO.:			JP 1998-40779	19980223

L38 ANSWER 135 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title photocatalyst, prepared by a specific sol-gel method, comprises ≥60 % of oxides of Ti, Zn, Fe, Mn, Mo, and/or W, and ≤40 % of metal ions of Pt, Rh, Mn, Cr, Ru, Ni, Pd, Fe, Co, Ir, Cu, Mo, Zr, Re, Ag, and/or Au in the forms of oxides or halides, wherein the photocatalyst shows absorption in visible light wavelength ranges (380-780 nm) and is homogeneously dispersed. The photocatalyst shows ≥5 % porosity and ≥10 m<sup>2</sup>/g total surface area (BET value). The photocatalyst can be used for cleaning air and water using sunlight. The photocatalyst can be used as a photoactive layer in a photoelectrochem. solar cell.

ACCESSION NUMBER: 1999:409601 CAPLUS  
 DOCUMENT NUMBER: 131:51971  
 TITLE: Highly porous, environmentally-friendly photocatalyst for visible light  
 INVENTOR(S): Kisch, H.; Lange, C.; Maier, W. F.; Zang, L.; Lettmann, Christian  
 PATENT ASSIGNEE(S): Studiengesellschaft Kohle m.b.H., Germany  
 SOURCE: Ger. Offen., 8 pp.  
 CODEN: GWXXRX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19757496	A1	19990624	DE 1997-19757496	19971223
WO 9933564	A1	19990708	WO 1998-EP8055	19981210
W: CA, JP, US				
PT, SE				
PRIORITY APPLN. INFO.:			DE 1997-19757496	19971223

REFERENCE COUNT: 18  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 136 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The corrosion behavior of some potential oxidation catalysts (Cu, Ag, Ni, Pd, Ru, and Co3O4) in subcrit. and supercrit. aqueous solns. (H2O/O2 and H2O/CH3COOH) as a function of temperature and pressure was studied. A continuously operating high-pressure testing plant with a 250 mL autoclave was used for the investigations. The samples were analyzed before and after treatment with supercrit. H2O (330-410°, 25-35 MPa) solns. by using different methods (gravimetric anal., light microscopy, SEM, energy-dispersive of x-rays spectroscopy, and x-ray diffractometry). The effluent of the test reactor was analyzed using atomic absorption spectroscopy. All materials except Ni are stable in pure subcrit. and supercrit. H2O. Treatment in solns. containing CH3COOH or O2 causes corrosion of all materials.

ACCESSION NUMBER: 1999:394925 CAPLUS  
 DOCUMENT NUMBER: 131:61795  
 TITLE: Corrosion behavior of inorganic materials in subcritical and supercritical aqueous solutions  
 AUTHOR(S): Kaul, Claudia; Vogel, Herbert; Exner, Hans Eckart  
 CORPORATE SOURCE: Fachbereich. Chem., Inst. Chem. Technol., Technische Univ. Darmstadt, Darmstadt, D-64287, Germany  
 SOURCE: Materialwissenschaft und Werkstofftechnik (1999), 30(6), 326-331  
 CODEN: MATWER; ISSN: 0933-5137  
 PUBLISHER: Wiley-VCH Verlag GmbH  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 REFERENCE COUNT: 9  
 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 137 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Zerovalent carbene complexes of Pd containing the 1,3-dihydro-1,3,4,5-tetramethylimidazol-2-ylidene ligand (tmyl) were synthesized. Pd(COD)(alkene) (COD = cyclooctadiene) reacts with the nucleophilic carbene tmyl to produce the complexes Pd(tmyl)2(alkene) (alkene = maleic anhydride (MAH) (2), tetracyanoethylene (TCNE) (3)). Spectroscopic studies on the complexes provide strong evidence of the almost purely donor nature of the carbene ligand. Oxidative addition of hydrocarbyl halide and dihalide substrates to 2 and 3 yield the PdII derivs. Pd(tmyl)2(Ph)I (4), Pd(tmyl)2I2 (5), Pd(tmyl)2(4-nitrophenyl)I (6), and Pd(tmyl)2Br2 (7). The zerovalent Ni complex Ni(tmyl)2 was produced in situ from the reaction of Ni(COD)2 with tmyl, and the oxidative addition of organic halides yields Ni(tmyl)2(o-tolyl)Br (8), Ni(tmyl)2(Me)I (9), and Ni(tmyl)2I2 (10). X-ray crystal structures of complexes 8 and 10 are reported which reveal square-planar coordination with the carbene ligands inclined at significant angles to the coordination planes of the complexes. Metal to ligand bond distances are all indicative of the electron d. induced on the metal center by the donor carbene ligands. Halide abstraction from 6 in the presence of Bu acrylate leads to migratory insertion of the olefin and elimination of the Heck coupling product. Under stoichiometric reaction conditions hydrocarbyl-imidazolium ions are also produced as byproducts. Selected complexes were tested as catalysts for the Heck reaction (Pd) and Suzuki coupling (Pd, Ni) and are highly active. The observed reaction behavior is interpreted, and a mechanism for the Heck coupling is provided.

ACCESSION NUMBER: 1999:213360 CAPLUS  
DOCUMENT NUMBER: 130:338234  
TITLE: Zerovalent Palladium and Nickel Complexes of Heterocyclic Carbenes: Oxidative Addition of Organic Halides, Carbon-Carbon Coupling Processes, and the Heck Reaction  
AUTHOR(S): McGuinness, David S.; Cavell, Kingsley J.; Skelton, Brian W.; White, Allan H.  
CORPORATE SOURCE: School of Chemistry, University of Tasmania, Hobart Tasmania, 7001, Australia  
SOURCE: Organometallics (1999), 18(9), 1596-1605  
CODEN: ORGNDD; ISSN: 0276-7333  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 130:338234  
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS  
FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 138 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Title catalysts are prepared by addition of MoIVbXcYdOn (X = Te and/or Sb; Y = Zl element chosen from Nb, Ta, W, Ti, Al, Zr, Cr, Mn, Fe, Ru, Co, Rh, Ni, Pd, Pt, Bi, B, In, P, rare earth metal, alkali metal, alkaline earth metal; 0.25 < a < 0.98; 0.003 < b < 0.5; 0.003 < c < 0.5; 0.003 < d < 0.5; n = number that satisfies the valence requirements of the other elements presence) to A components (A = Zl element chosen from Mo, W, V, Nb, Ta, Ti, B, and P) and Z components (Z = Zl elements chosen from Cr, Mn, Fe, Co, Ni, Cu, Zn, Ag, Al, Sn, Pb, Bi, alkali metal, alkaline earth metal, and rare earth metal) solns. or slurries, removal of solvents, treatment under heating. MoIV0.3Te0.23Nb0.12On/SiO2 was added to an aqueous solution containing cobalt acetate and ammonium paramolybdate, dried, heated at 350° for 1 h, and calcined at 600° for 2 h to give a catalyst with which propane/NH3/air (1:0.3:4) gas was treated at 412° to give 15.0% acrylonitrile.

ACCESSION NUMBER: 1999:141996 CAPLUS  
DOCUMENT NUMBER: 130:209437  
TITLE: Preparation of gas-phase catalytic oxidation catalysts for preparation of nitriles  
INVENTOR(S): Numasawa, Tomoyoshi; Ohshima, Kazunori; Ushikubo, Takashi; Kinoshita, Hisao  
PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKKXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11057479	A2	19990302	JP 1997-214664	19970808
PRIORITY APPLN. INFO.: JP 1997-214664 19970808				

L38 ANSWER 139 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Amorphous molybdenum/tungsten sulfides, with the general formula Mn+2x/n(L6S8)Sx [L is Mo or W; M is a ternary metal; n = 1, 2, or 3; x = 0.5-1.5], were developed as candidate petroleum hydroprocessing catalysts. M can be chosen from Li, Na, K, Rb, Cs, Mg, Ca, Sr, Ba, Ti, V, Cr, Mn, Fe, Ru, Os, Co, Ir, Ni, Pd, Pt, Cu, Zn, Ag, Au, Cd, Hg, Ga, In, Tl, Sn, Pb, Bi, Se, La, Y, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Er, Tm, Ho, Yb, and Lu. The comps. can also be prepared with a coordinating organic ligand, with general formula Mn+2x/n(Mo6S8)Sx.yR (R = MeOH, acetonitrile, THF, propionitrile, BuOH, PrOH, and amines; y = 4-5). Chemical and spectral characterization of these amorphous materials showed that the (M6S8)0 cluster units are present. Vacuum thermolysis of the amorphous Na2x(Mo6S8)Sx.yMeOH first produces poorly crystalline NaMo6S8 by disproportionation at 800° and well-crystallized NaMo6S8 at 2900°. Ion-exchange of the sodium material in MeOH with soluble M2+ and M3+ salts (M = Sn, Co, Ni, Pb, La, Ho) produces the Mn+2x/n(Mo6S8)Sx.yMeOH comps. Addnl., the reduced ternary molybdenum sulfides with the general formula Mn+2x/nMo6S8+x(MeOH)y (M = Sn, Co, Ni) is an effective hydrodesulfurization (HDS) catalyst both as prepared and after a variety of pretreatment conditions. Under specified pretreatment conditions in flowing H2, the SnMoS-type catalyst can be stabilized, and while still amorphous, can be considered as "Chevrel phase-like" in that both contain Mo6S8 cluster units. Furthermore, the small-cation NiMoS- and CoMoS-type pretreated catalyst were very active HDS catalysts with rates that exceeded the model unpromoted and cobalt-promoted MoS2 catalysts. The comps. are activated in a reducing H2 flow.

ACCESSION NUMBER: 1999:119806 CAPLUS  
DOCUMENT NUMBER: 130:170516  
TITLE: Reduced amorphous molybdenum/tungsten ternary mixed metal sulfides as candidate petroleum hydroprocessing catalysts  
INVENTOR(S): Hilsenbeck, Shane J.; McCarley, Robert E.; Schrader, Glenn L.; Xie, Xiaobing  
PATENT ASSIGNEE(S): United States Dept. of Energy, USA  
SOURCE: U.S., 18 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5872073	A	19990216	US 1996-694907	19960809
PRIORITY APPLN. INFO.: US 1996-694907 19960809				

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS  
FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 140 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Acrylonitrile or methacrylonitrile is prepared in high yield and selectivity by the gas-phase ammoxidn. of propane or isobutane, resp., in the presence of a silica-supported ammoxidn. catalyst Mo VpXqNbZrSn (X = Te and/or Sb; Z = Zl of Ta, W, Cr, Ti, Zr, Bi, Sn, Hf, Mn, Re, Fe, Ru, Co, Rh, Ni, Pd, Pt, Ag, Zn, B, Al, Ga, In, Ge, Pb, P, rare earth metals, Group IIA metals; 0.15 p ≤ 0.6; 0.015 q, r ≤ 0.6; 0 ≤ s ≤ 1; n = amount necessary for to satisfy the metal oxidation states) and for which specific X-ray diffraction pattern data is presented.

ACCESSION NUMBER: 1999:116679 CAPLUS  
DOCUMENT NUMBER: 130:154073  
TITLE: Gas-phase ammoxidation catalysts for the preparation of acrylonitrile or methacrylonitrile from propane or isobutane  
INVENTOR(S): Hinago, Hidenori; Komada, Satoru  
PATENT ASSIGNEE(S): Asahi Kasei Kogyo K.K., Japan  
SOURCE: Ger. Offen., 32 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19835247	A1	19990211	DE 1998-19835247	19980804
JP 11047598	A2	19990223	JP 1997-222041	19970805
JP 11239725	A2	19990907	JP 1998-232378	19980805
US 6063728	A	20000516	US 1998-129414	19980805
US 6343916	A	20001107	US 1999-453698	19991203
PRIORITY APPLN. INFO.: JP 1997-222041 A 19970805				
JP 1997-355496 A 19971224				
US 1998-129414 A3 19980805				

L38 ANSWER 141 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Raw materials are mixed in a solvent, dried, calcined, and fired to give a precursor, which is then washed in 2l solvent(s) selected from aqueous organic acid solns., alcs., aqueous inorg. acid solns., and H2O2 to give crystalline mixed oxide having composition formula  $M_{0.5}VbSb_{0.5}XO_n$  (X = 2l element(s) selected from Ti, Zr, Nb, Ta, Cr, W, Mn, Fe, Ru, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Zn, In, Sn, Pb, Bi, Ce, and alkaline earth metals; b = 0.02-0.99; c = 0.001-0.9; x = 0-0.89; 0.001 ≤ c/b ≤ 0.80; when a = 1), with crystal structures and power x-ray diffractometry peaks precisely defined in the patent. The oxides are useful for electronic apparatus, electrode materials, functional inorg. materials, and in petrochem. field. Use of the oxide in conversion of ethane into ethylene was demonstrated.

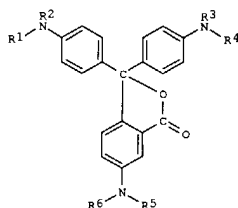
ACCESSION NUMBER: 1999:114051 CAPLUS  
 DOCUMENT NUMBER: 130:184524  
 TITLE: Manufacture of crystalline mixed oxides containing molybdenum, vanadium, and antimony  
 INVENTOR(S): Koyasu, Yukio; Wajiki, Noboru; Takashima, Masaki  
 PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11043314	A2	19990216	JP 1997-199863	19970725
PRIORITY APPLN. INFO.: JP 1997-199863 19970725				

L38 ANSWER 142 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 260 refs. on topics of: characterization methods; characterization and location of transition metal ions: titanium, vanadium, chromium, manganese, iron, cobalt, nickel, palladium, copper, zinc, molybdenum, platinum and rhodium, silver, zirconium; catalysis: ethylene dimerization by nickel(I) and palladium(I), oxidation reactions, methanol conversion; conclusions and outlook.

ACCESSION NUMBER: 1999:87299 CAPLUS  
 DOCUMENT NUMBER: 130:173532  
 TITLE: Transition-Metal Ions in Aluminophosphate and Silicoaluminophosphate Molecular Sieves: Location, Interaction with Adsorbates and Catalytic Properties  
 AUTHOR(S): Hartmann, Martin; Kevan, Larry  
 CORPORATE SOURCE: Institute of Chemical Technology I, University of Stuttgart, Stuttgart, D-70550, Germany  
 SOURCE: Chemical Reviews (Washington, D. C.) (1999), 99(3), 635-663  
 CODEN: CHREAY; ISSN: 0009-2665  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English  
 REFERENCE COUNT: 265  
 THERE ARE 265 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L38 ANSWER 143 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
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AB Phthalides (I; R1-R6 = alkyl; R1NR2, R3NR4, R5NR6 can form heterocyclic ring) are prepared by oxidation of the corresponding o-carboxytriphenylmethanes in the presence of Ni compds., Pd compds., Pt compds., or Ag compds. in aqueous solvents. The phthalides are useful as color formers for color-developing recording materials (no data). Air oxidation of 2-[4,4'-bis(dimethylamino)benzhydryl]-5-(dimethylamino)benzoic acid in the presence of Pt/C at 90-95° for 15 h in aqueous NaOH gave 96% 3,3-bis(4-dimethylaminophenyl)-6-dimethylaminophthalide.

ACCESSION NUMBER: 1999:49221 CAPLUS  
 DOCUMENT NUMBER: 130:126289  
 TITLE: Preparation of phthalides as color formers by oxidation of o-carboxytriphenylmethanes using noble metal compound catalysts  
 INVENTOR(S): Nakao, Satoshi; Matsumoto, Mansuke; Nishimura, Takeshi; Wada, Masaru; Kanemura, Yoshinobu  
 PATENT ASSIGNEE(S): Yamamoto Chemicals Inc., Japan; Mitsui Chemicals Inc.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11012262	A2	19990119	JP 1997-163594	19970620
PRIORITY APPLN. INFO.: JP 1997-163594 19970620				

OTHER SOURCE(S): CASREACT 130:126289; MARPAT 130:126289

L38 ANSWER 144 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The film is manufactured by anodization of Ti in a mixed aqueous electrolytic solution comprising (A) an aqueous electrolytic solution containing a glycerophosphate salt and an acetate of alkali metal or an alkaline earth metal and (B) an acetate of transition metal of Y, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Tc, Re, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, Hg or nontransition metal of B, Al, Ga, In, Tl, Si, Ge, Sn, Pb, P, As, Sb, Bi, S, Se, Te, Po, La, Ce or the acetate-containing solution Ti may be anodized by using A and then the mixed solution (by addition of B). The film obtained by anodizing may be heat treated in H2O to give a porous film. The film is useful for a photocatalyst or a solar cell.

ACCESSION NUMBER: 1999:35259 CAPLUS  
 DOCUMENT NUMBER: 130:102158  
 TITLE: Manufacture of metal-containing thick titanium oxide film by anodizing of titanium  
 INVENTOR(S): Ishizawa, Hitoshi  
 PATENT ASSIGNEE(S): Nikon Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11006098	A2	19990112	JP 1997-161339	19970618
PRIORITY APPLN. INFO.: JP 1997-161339 19970618				



L38 ANSWER 145 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Zero-valent Zn metal was used for the reductive dehalogenation of chlorinated ethylenes. To enhance this environmental remediation chemical, ultrafine Zn particles and transition metal additives (coatings) were used. Activated Zn (oxyzinc) significantly enhanced the reduction/dehalogenation process, especially in the presence of Ni and Pd coatings. These reagents were able to achieve rapid, deep reductive dehalogenation of trichloroethylene, trichloroethane, and dichloroethylenes at room temperature under neutral pH conditions.

Highest reactivity was for ultrafine Zn coated with small amts. of Pd. Products, reaction rates, and possible reaction mechanisms and intermediates are presented.

ACCESSION NUMBER: 1999:18849 CAPLUS  
 DOCUMENT NUMBER: 130:129581  
 TITLE: Ultrafine zinc and nickel, palladium, silver coated zinc particles used for reductive dehalogenation of chlorinated ethylenes in aqueous solution

AUTHOR(S): Li, Welfang; Klabunde, Kenneth J.  
 CORPORATE SOURCE: Department of Chemistry, Kansas State University, Manhattan, KS, 66506, USA  
 SOURCE: Croatica Chemica Acta (1998), 71(4), 853-872  
 CODEN: CCACAA; ISSN: 0011-1643  
 PUBLISHER: Croatian Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS

FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 146 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Delivery and scavenging agents are provided for the combinatorial synthesis of organometallic compds. in a solution or suspension, where the agents are constructed from a solid support allowing for easy separation of unreacted reagents or unwanted materials from a synthesis reaction. Use of these solid supported agents also allows otherwise unfavorable reactions to be driven to completion using large excesses of reactants and minimizes the chances for competing bimol. side reactions in parallel or rapid serial synthesis. Thus, LNiBr2 (L = 1,4-dimesityl-2,3-dimethyl-1,4-diazabutadiene) was prepared in 95% yield by reacting L with polystyrene-graft-poly(ethylene glycol) supported NiBr2.

ACCESSION NUMBER: 1999:8002 CAPLUS  
 DOCUMENT NUMBER: 130:60216  
 TITLE: Delivery and scavenging agents for combinatorial synthesis of organometallic compds.  
 INVENTOR(S): Boussie, Thomas; Hall, Keith A.; Lapointe, Anne M.; Murphy, Vince; Powers, Timothy; Van Beek, Johannes A. M.  
 PATENT ASSIGNEE(S): Symyx Technologies, USA  
 SOURCE: PCT Int. Appl., 106 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 37  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9856796	A1	19981217	WO 1998-US10863	19980528
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SE, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 6030917	A	20000229	US 1997-898715	19970722
EP 1280185	A1	20030129	EP 2002-18112	19971008
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AU 9878016	A1	19981230	AU 1998-78016	19980528
EP 920436	A1	19990609	EP 1998-926102	19980528
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 2001033375	A1	20011025	US 2001-874758	20010605
AU 766682	B2	20031023	AU 2002-27470	20020320
AU 766740	B2	20031023	AU 2002-27471	20020320
US 2003100119	A1	20030529	US 2002-269362	20021011
PRIORITY APPLN. INFO.:			US 1997-48987P	P 19970609
			US 1997-898715	A 19970722
			US 1997-989739	A 19971212
			US 1998-25841	A 19980219

L38 ANSWER 146 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 US 1994-327513 A3 19941018  
 US 1996-16102P P 19960723  
 US 1996-28105P P 19961009  
 US 1996-28106P P 19961009  
 US 1996-29255P P 19961025  
 US 1997-35202P P 19970110  
 US 1997-35366P P 19970110  
 US 1997-50949P P 19970613  
 EP 1997-910017 A3 19971008  
 US 1997-947085 A1 19971008  
 WO 1998-US10863 W 19980528  
 US 1998-127660 A2 19980731  
 US 1999-337047 B1 19990621  
 AU 1999-59439 A3 19991116  
 US 1999-474344 A3 19991229

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 147 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process for the HF-free alkylation of C2-6 alkenes (e.g., butene) with C4-6 alkanes (e.g., isobutane) to afford antiknock alkylates comprises the liquid-phase alkylation of the alkenes and alkanes under alkylation conditions in the presence of an alkylation catalyst comprising: (a) a refractory inorg. oxide; (b) the reaction product of a first metal halide and bound surface hydroxyl groups of the refractory inorg. oxide; (c) a second metal cation; and (d) optionally a zero-valent third metal. The refractory inorg. oxide is selected from alumina, titania, zirconia, chromia, silica, boria, silica-alumina, and their combinations and the first metal halide is a fluoride, chloride, or bromide of aluminum or boron. The second metal cation is selected from: monovalent metal cations in an amount of 0.0020-0.20 g atoms per 100 g of refractory inorg. oxide for lithium, potassium, cesium, rubidium, silver, and copper, and 0.012-0.12 g atoms for sodium; and alkaline earth metal cations in an amount of 0.0013-0.01 g atoms per 100 g of refractory inorg. oxide for beryllium, strontium, and barium, and 0.004-0.1 g atoms per 100 g support for magnesium and calcium, or their combinations. The third metal is selected from platinum, palladium, nickel, ruthenium, rhodium, osmium, and iridium, and their combinations.

ACCESSION NUMBER: 1999:3319 CAPLUS  
 DOCUMENT NUMBER: 130:40786  
 TITLE: Metal cation-modified alkylation catalysts for the preparation of antiknock C2-6 alkene alkylates of C4-6 alkanes  
 INVENTOR(S): Kocal, Joseph A.; Oroskar, Anil R.  
 PATENT ASSIGNEE(S): UOP Inc., USA  
 SOURCE: U.S., 7 pp., Cont.-in-part of U.S. Ser. No. 330,950, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5849977	A	19981215	US 1996-630316	19960410
US 5739074	A	19980414	US 1995-453044	19950530
PRIORITY APPLN. INFO.:			US 1993-93150	19930719
			US 1994-330950	19941028

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 148 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In the preparation of alkyl cyanides by gas-phase oxidation of alkanes with oxygen and ammonia, a complex oxide represented by formula  $\text{Mo}_x\text{V}_y\text{Sb}_z\text{X}_m\text{O}_n$  (X = 21 metal elements selected from alkaline earth metals among Ti, Zr, Nb, Ta, Cr, W, Mn, Fe, Ru, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Zn, In, Sn, Pb, Bi, and Ce; when a = 1, 0.02 ≤ b ≤ 0.99, 0.001 ≤ c ≤ 0.9, 0 ≤ x ≤ 0.89, and 0.001 ≤ c ≤ 0.80; n is determined by the oxidation state of other elements) which possesses a crystal structure with specific cell parameters and specific powder X-ray diffraction peaks is used as a catalyst. Nitriles, useful as intermediates for industrial raw materials, are obtained from alkanes at low temperature in high yields and high selectivity. Thus, 17.5 g Sb<sub>2</sub>O<sub>3</sub> powder was added to a solution of 35.1 g ammonium metavanadate in 600 mL warm H<sub>2</sub>O and the resulting slurry was heated with stirring for 6 h, followed adding 600 mL of an aqueous containing 176.6 g ammonium paramolybdate [(NH<sub>4</sub>)<sub>6</sub>Mo<sub>7</sub>O<sub>24</sub>·4H<sub>2</sub>O], and the resulting slurry (Nb/Mo ratio = 0.10) was heated to remove H<sub>2</sub>O to give a solid. The latter solid was heated at 380° under stream of N and then heated to 600° in 5 min to give a complex oxide having Mo<sub>1</sub>V<sub>0.3</sub>Sb<sub>0.12</sub>Nb<sub>0.10</sub>O<sub>3.55</sub> (I), which (10 g) was immersed in 100 mL of 5 weight% aqueous oxalic acid at 70° for 6 h, filtered, and dried to give a complex oxide Mo<sub>1</sub>V<sub>0.26</sub>Sb<sub>0.10</sub>Nb<sub>0.10</sub>O<sub>3.60</sub> (II). The latter complex oxide (10 g) was immersed in 100 mL of 2 weight% aqueous H<sub>2</sub>O<sub>2</sub> at 70° for 6 h, filtered, and dried to give Mo<sub>1</sub>V<sub>0.26</sub>Sb<sub>0.09</sub>Nb<sub>0.12</sub>O<sub>3.67</sub> (III) having a pure phase-I crystal phase and a crystal unit cell defined by a = 2.677, b = 2.122, and c = 0.401 (α = β = γ = 90.0°). III (0.55 g) was packed in a reactor, to which a 1:0.3:4 mol mixture of propane, NH<sub>3</sub>, and air was fed at SV 1,600 h<sup>-1</sup> and 410° to give 21.0% acrylonitrile with 29.1% propane conversion ratio and 72.2 % selectivity as compared to 25.8% yield, 17.6% conversion ratio, and 68.2% selectivity for the catalyst I and 29.3% yield, 17.6% conversion ratio, and 68.2% selectivity for the catalyst II.

ACCESSION NUMBER: 1998:806526 CAPLUS  
 DOCUMENT NUMBER: 130:109967  
 TITLE: Method of preparation of alkane carbonitriles by gas-phase oxidation of alkanes with oxygen and ammonia  
 INVENTOR(S): Koyasu, Yukio; Wajiki, Noboru; Takashima, Masaki  
 PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10330343	A2	19981215	JP 1997-232497	19970828
PRIORITY APPLN. INFO.:			JP 1997-86657	19970404

L38 ANSWER 150 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A knitted silica-fiber was prepared and used as support for combustion catalysts. Different Pd-MeO and Pt-MeO (Me = Ni, Co, Cu and Mn) catalysts were prepared, and their catalytic activities were investigated in the conversion of gas mixts. consisting of methane, ethene, naphthalene (model PAH), carbon monoxide, carbon dioxide, nitrogen and water vapor in the temperature range 150-800°C. Combinations of Pd-Ni and Pt-Ni were found to result in decreased light-off temps. in methane combustion. The Pd-Ni /silica-fiber catalyst exhibited a light-off temperature in methane combustion of ca 220°C lower than that obtained over the Pd/silica-fiber catalyst. Deactivation of the catalysts was observed by subjecting the catalysts to reaction mixture flow at 800°C for 6 h. For the Pd-containing catalysts, the deactivation was considered to be due to both support and metal sintering as well as changes in the nature of the Pd-O species. The catalysts were characterized by N<sub>2</sub>-adsorption, H<sub>2</sub>-adsorption, O<sub>2</sub>-TPD and H<sub>2</sub>-TPR.

ACCESSION NUMBER: 1998:771770 CAPLUS  
 DOCUMENT NUMBER: 130:28667  
 TITLE: Catalytic clean-up of emissions from small-scale combustion of biofuels  
 AUTHOR(S): Neyestanaki, A. Kalantar; Lindfors, L.-E.  
 CORPORATE SOURCE: Laboratory of Industrial Chemistry, Abo Akademi University, Turku, FIN-20500, Finland  
 SOURCE: Fuel (1998), 77(15), 1727-1734  
 CODEN: FUELAC; ISSN: 0016-2361  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 149 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB An organometallic polymer having the structure  $\text{CH}_2\text{CH}(\text{CH}_2)\text{nMR1R2}(\text{CH}_2)\text{p}$  is disclosed. R1 and R2 are independently selected from the group of H, alkyl having 30 or fewer carbons, alkenyl having 30 or fewer carbons, and aromatic having one to ten rings; n=0-30; p=0-30; and M is a metal selected from the group consisting of Sn, Ge, Pb, Hg, Ni, Pd, Pt, Cr, Fe, Co, Cu, and Zn. Most preferably, M is Sn, R1 and R2 are Bu, n is 3, and p is 3. Antibacterial/antifungal compns. may be formed by combining the polymer with a suitable carrier.

ACCESSION NUMBER: 1998:788765 CAPLUS  
 DOCUMENT NUMBER: 130:52849  
 TITLE: Polycarbometallanes via acyclic diene metathesis polymerization  
 INVENTOR(S): Wagener, Kenneth B.; Wolfe, Patrick S.; Gomez, Fernando J.  
 PATENT ASSIGNEE(S): University of Florida, USA  
 SOURCE: U.S., 10 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5847064	A	19981208	US 1997-807494	19970227
PRIORITY APPLN. INFO.:			US 1997-807494	19970227

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 151 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The cleavage of styrene oxide by different reagents like Raney nickel, palladium-carbon and sodium borohydride in the presence of β-cyclodextrin and its derivs. like β-CD-epichlorohydrin (β-CD-polymer) and heptakis-2,6-di-O-methyl-β-cyclodextrin (DMβ-CD) showed a distribution in formation of ethylbenzene, 1-phenylethanol and 2-phenylethanol. Formation of deoxygenated products like styrene and ethylbenzene were suppressed by β-CD and its derivs. in hydrogenation over Raney nickel increasing the proportion of 2-phenylethanol. β-CD and its derivs. regulated increase in formation of 1-phenylethanol under reduction by Pd-C and NaBH<sub>4</sub>. Observed selectivities have been correlated to arise directly from the disposition adopted by styrene oxide inside the β-CD cavity, the nature and manner of which has been arrived at from the spectroscopic studies (UV and NMR) of inclusion.

ACCESSION NUMBER: 1998:725355 CAPLUS  
 DOCUMENT NUMBER: 130:124941  
 TITLE: Regulatory nature of β-cyclodextrin in selective ring-opening during reduction of styrene oxide  
 AUTHOR(S): Ravichandran, Ramaswamy; Divakar, Soundar  
 CORPORATE SOURCE: Department of Microbiology, Central Food Technological  
 SOURCE: Research Institute, Mysore, 570 013, India  
 Journal of Molecular Catalysis A: Chemical (1999), 137(1-3), 31-39  
 CODEN: JMCCF2; ISSN: 1381-1169  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS  
 FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 152 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB 2,3,6-Triphenylphenol was prepared with high yield by dehydrogenation of 2,5,6-triphenyl-2-cyclohexenone (I) in the presence of highly active Pd/C catalyst at relatively low temps. On this basis, bimetallic catalysts, such as Pd-Re/C, Pd-Co/C, Pd-Ni/C, Pd-Cu/C and Pd-Ru/C (Pd/M = 1/1 molar ratio) were also used in the dehydrogenation. Comparing the results of the dehydrogenation catalyzed by mono- and different bimetallic catalysts, one can find remarkable pos. or neg. bimetallic effect. Among these catalysts, Pd-Co/C is the best one for the dehydrogenation of I.

ACCESSION NUMBER: 1998:719876 CAPLUS  
 DOCUMENT NUMBER: 130:4109  
 TITLE: Preparation of 2,3,6-triphenylphenol by the catalytic dehydrogenation of 2,3,6-triphenyl-2-cyclohexenone  
 AUTHOR(S): Gao, Yan; Wang, Fudong; Liao, Shijian; Yu, Daorong; Wang, Jing  
 CORPORATE SOURCE: Dalian Inst. of Chemical Physics, Chinese Academy of Sciences, Dalian, 116023, Peop. Rep. China  
 SOURCE: Shiyu Huagong (1998), 27(10), 710-713  
 CODEN: SHHUES; ISSN: 1000-8144  
 PUBLISHER: Beijing Huagong Yanjiuyuan  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese

L38 ANSWER 153 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Dissociation of methane on different transition metals M (M=Ru, Ir, Rh, Ni, Pd, Pt, Cu, Ag, Au) has been investigated using a quasi-relativistic d.-functional method. Reaction enthalpies for the steps involved are determined. The activation energies have been estimated using the analytic BOC-MP formula. The transition metals, Ru, Rh, ..., Pt are shown to exhibit high activity in the dissociation of methane, whereas the coinage metals (Cu, Ag, Au) are very inactive. The conclusion is in agreement with exptl. observations. The total dissociation enthalpy  $\Delta H$  for the complete dissociation of CH<sub>4</sub> to give surface C and H can be regarded as a measure for the activity of the metal in methane dissociation. The order of the calculated  $\Delta H$ 's is consistent with the order of methane conversions over the metals. The dissociation of methane is also examined in the presence of adsorbed oxygen. Oxygen at on-top site promotes methane dehydrogenation. Oxygen at hollow site promotes methane dehydrogenation on Pt and the coinage metals, but is not beneficial on the other transition metals.

ACCESSION NUMBER: 1998:708352 CAPLUS  
 DOCUMENT NUMBER: 130:52076  
 TITLE: Dissociation of methane on different transition metals  
 AUTHOR(S): Liao, Meng-Sheng; Zhang, Qian-Er  
 CORPORATE SOURCE: Chemistry Department, State Key Laboratory for Physical Chemistry of Solid Surfaces, Xiamen University, Xiamen, 361005, Peop. Rep. China  
 SOURCE: Journal of Molecular Catalysis A: Chemical (1998), 136(2), 185-194  
 CODEN: JMCCF2; ISSN: 1381-1169  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L38 ANSWER 154 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The catalytic hydrogenolysis of biphenylene was carried out using Pt, Pd, and Ni phosphine complexes under an atmospheric of H<sub>2</sub> between 56 and 120°.

The Pt species Pt(PET3)3, (PET3)2Pt(2,2'-biphenyl), 1, trans-(PET3)2PtH2, and trans-(PET3)2Pt( $\alpha$ -biphenyl)H, 4, were all viable catalysts. The resting state species in each case was complex 4. At 80° under an atmospheric of H<sub>2</sub>, 4 reductively eliminates biphenyl and forms trans-(PET3)2PtH2. Free PET3 inhibits the rate of reductive elimination from 4 and the overall rate of hydrogenolysis. The novel Pt(IV) dihydride trans,cis-(PET3)2Pt(2,2'-biphenyl)H2 was synthesized and characterized by x-ray anal. Trans,cis-(PET3)2Pt(2,2'-biphenyl)H2 undergoes unimol. reductive elimination. On the basis of these results a catalytic cycle is proposed. A mixture of [(dippe)PtH]2 and [(dippe)PtH2 (dippe = bis(diisopropylphosphino)ethane) was also capable of catalyzing the hydrogenolysis of biphenylene under an atmospheric of H<sub>2</sub> at 120°.

The rate of hydrogenolysis increases as the concentration of biphenylene, H2, and [(dippe)PtH2] increases. These observations are consistent with the C-C bond activation of biphenylene occurring via (dippe)PtH2, not [(dippe)PtO]. The rate of catalytic hydrogenolysis was not affected by the length of the chelating phosphine bridge. The Ni complex [(dippe)NiH]2 was the most efficient catalyst for the hydrogenolysis of biphenylene (16 turnovers/day at 56°). The resting state species was (dippe)Ni(2,2'-biphenyl).

ACCESSION NUMBER: 1998:690699 CAPLUS  
 DOCUMENT NUMBER: 130:52569  
 TITLE: Catalytic hydrogenolysis of biphenylene with platinum, palladium, and nickel phosphine complexes  
 AUTHOR(S): Edelbach, Brian L.; Vicio, David A.; Lachicotte, Rene J.; Jones, William D.  
 CORPORATE SOURCE: Department of Chemistry, University of Rochester, Rochester, NY, 14627, USA  
 SOURCE: Organometallics (1998), 17(22), 4784-4794  
 CODEN: ORGND7; ISSN: 0276-7333  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 155 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The surface chemical of SO<sub>2</sub> on polycryst. Sn, Pt(111), and a ( $\sqrt{3} \times \sqrt{3}$ )R30°-Sn/Pt(111) surface alloy has been investigated using synchrotron-based high-resolution photoemission and ab initio SCF calcs. Metallic tin has a large chemical affinity for SO<sub>2</sub>. At 100-150 K, SO<sub>2</sub> disproportionates on polycryst. tin forming multilayers of SO<sub>3</sub> (2SO<sub>2</sub>, a  $\rightarrow$  SO<sub>3</sub>g + SO<sub>3</sub>,a). At these low temps., the full dissociation of SO<sub>2</sub> (SO<sub>2</sub>,a  $\rightarrow$  S + 2Oa) is minimal. As the temperature is raised to 300 K, the SO<sub>3</sub> decomp., yielding SO<sub>4</sub>, S, and O on the surface. Pure tin exhibits a much higher reactivity toward SO<sub>2</sub> than late transition metals (Ni, Pd, Pt, Cu, Ag, Au). In contrast, tin atoms in contact with Pt(111) interact weakly with SO<sub>2</sub>. A ( $\sqrt{3} \times \sqrt{3}$ )R30°-Sn/Pt(111) alloy is much less reactive toward SO<sub>2</sub> than polycryst. tin or clean Pt(111). At 100 K, SO<sub>2</sub> adsorbs molecularly on ( $\sqrt{3} \times \sqrt{3}$ )R30°-Sn/Pt(111). Most of the adsorbed SO<sub>2</sub> desorbs intact from the surface (250-300 K), whereas a small fraction disso. into S and O. The drastic drop in reactivity when going from pure tin to the ( $\sqrt{3} \times \sqrt{3}$ )R30°-Sn/Pt(111) alloy can be attributed to a combination of ensemble and electronic effects. On the other hand, the low reactivity of the Pt sites in ( $\sqrt{3} \times \sqrt{3}$ )R30°-Sn/Pt(111) with respect to Pt(111) is a consequence of electronic effects. The Pt-Sn bond is complex, involving a Sn(5s,5p)  $\rightarrow$  Pt(6s,6p) charge transfer and a Pt(5d)  $\rightarrow$  Pt(6s,6p) rehybridization that localize electrons in the region between the metal centers. These phenomena reduce the electron donor ability of Pt and Sn, and both metals are not able to respond in an effective way to the presence of SO<sub>2</sub>. The Sn/Pt system illustrates how a redistribution of electrons that occurs in bimetallic bonding can be useful for the design of catalysts that have a remarkably low reactivity toward SO<sub>2</sub> and for controlling sulfur poisoning.

ACCESSION NUMBER: 1998:659177 CAPLUS  
 DOCUMENT NUMBER: 129:281735  
 TITLE: Surface Chemistry of SO<sub>2</sub> on Sn and Sn/Pt(111) Alloys: Effects of Metal-Metal Bonding on Reactivity toward Sulfur  
 AUTHOR(S): Rodriguez, Jose A.; Jirsak, Tomas; Chaturvedi, Sanjay  
 CORPORATE SOURCE: Hrbek, Jan  
 Department of Chemistry, Brookhaven National Laboratory, Upton, NY, 11973, USA  
 SOURCE: Journal of the American Chemical Society (1998), 120(43), 11149-11157  
 CODEN: JACSAT; ISSN: 0002-7863  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 87 THERE ARE 87 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L38 ANSWER 156 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Industrial wastewaters containing organic matter (especially, inks or dyes) are treated by reaction over photolysis **catalysts** containing TiO<sub>2</sub>, ZnO, WO<sub>3</sub>, and optionally  $\geq 1$  metals of Pt, **Pd**, **Ni**, and **Cu** under UV irradiation at wavelength 5420 nm in a catalytic tubular reactor. In one embodiment, the outer surface of the tubular reactor wall is surrounded with multiple magnets for separating and recovering the **catalyst** fines from treated water at outlet side.  
 ACCESSION NUMBER: 1998:535058 CAPLUS  
 DOCUMENT NUMBER: 129:179642  
 TITLE: Apparatus and method for treatment of wastewaters containing organic matter by using photolysis **catalysts**  
 INVENTOR(S): Saiki, Hiroshi; Nishiguchi, Satoshi; Matsuji,  
 Hirohide  
 PATENT ASSIGNEE(S): Canon K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10216715	A2	19980818	JP 1997-18342	19970131
PRIORITY APPLN. INFO.: JP 1997-18342 19970131				

L38 ANSWER 157 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title method involves utilization of an underlay film or substrate whose square root average of the surface roughness is smaller than the thickness of the amorphous silicon film contacting the underlay film or substrate. Alternatively, the method utilizes an underlay film or substrate having a certain protrusion d. Specifically, the **catalyst** may comprise **Ni**, **Pd**, **Pt**, **Cu**, **Ag**, and/or Fe. A high-quality film is obtained even when the distance of the lateral growth is increased. The method is useful for fabricating a TFT.  
 ACCESSION NUMBER: 1998:496187 CAPLUS  
 DOCUMENT NUMBER: 129:115952  
 TITLE: Production method of crystalline silicon film from amorphous silicon film using crystallization **catalyst**  
 INVENTOR(S): Otani, Hisashi  
 PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd. (SEL),  
 Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10199807	A2	19980731	JP 1996-358973	19961227
US 6733584	B1	20040511	US 1997-995368	19971222
PRIORITY APPLN. INFO.: JP 1996-358973 A 19961227				

L38 ANSWER 158 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title method involves annealing an amorphous silicon film at a temperature T for  $\geq 90$  and  $<100$  % of a period required for the onset of the crystallization at the temperature T without using the **catalyst**. A method for obtaining a sp. temperature of the annealing is also described. Specifically, the **catalyst** may comprise **Ni**, **Pd**, **Pt**, **Cu**, **Ag**, and/or Fe. The method is useful for fabricating a TFT.  
 ACCESSION NUMBER: 1998:493453 CAPLUS  
 DOCUMENT NUMBER: 129:115948  
 TITLE: Production method of crystalline silicon film from amorphous silicon film using crystallization **catalyst**  
 INVENTOR(S): Otani, Hisashi  
 PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd. (SEL),  
 Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10199806	A2	19980731	JP 1996-358972	19961227
US 6140166	A	20001031	US 1997-997910	19971224
US 6627486	B1	20030930	US 2000-686652	20001010
PRIORITY APPLN. INFO.: JP 1996-358972 A 19961227				
JP 1997-78979 A 19970313				
US 1997-997910 A1 19971224				

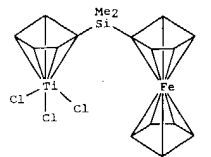
L38 ANSWER 159 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Simultaneous reduction of carbon dioxide and nitrate ions was examined at gas-diffusion electrodes with various **catalysts** (Cr, Mo, Mn, Ru, Co, Rh, Ir, **Ni**, **Pd**, **Pt**, **Cu**, **Ag**, **Au**, **Zn**, **Cd**, In, Tl, Sn, and Pb). The formation of urea, CO, formic acid, nitrite ions, and ammonia at the gas-diffusion electrodes with Group 11-14 **catalysts**, except for Au, was found in the simultaneous reduction. The maximum faradaic efficiency of urea formation on **Zn catalysts** is approx.35% at -1.75 V. The formation of urea at the gas-diffusion electrodes with groups 6-10 **catalysts** was not found in the simultaneous reduction of CO<sub>2</sub> and nitrate. Relation of the ability for urea formation to the ability for CO and NH<sub>3</sub> formation was studied with various **catalysts**. The ability for urea formation with the **catalysts** depends on the ability for CO and NH<sub>3</sub> formation. The **catalysts** with high ability for CO and NH<sub>3</sub> formation could form large amts. of CO-like and ammonia-like precursors. The faradaic efficiency of urea formation for simultaneous reduction with nitrate ions is lower than that with nitrite ions. This result seems to be related to the ability for ammonia-like precursor formation.  
 ACCESSION NUMBER: 1998:441244 CAPLUS  
 DOCUMENT NUMBER: 129:181374  
 TITLE: Electrochemical synthesis of urea at gas-diffusion electrodes. IV. Simultaneous reduction of carbon dioxide and nitrate ions with various metal **catalysts**  
 AUTHOR(S): Shibata, Masami; Yoshida, Kohji; Furuya, Nagakazu  
 CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering, Yamanashi University, Kofu, 400-8511, Japan  
 SOURCE: Journal of the Electrochemical Society (1998), 145(7), 2348-2353  
 CODEN: JESQAN; ISSN: 0013-4651  
 PUBLISHER: Electrochemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L38 ANSWER 160 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Samples containing 1 wt% of Co, Cu, Fe, Ni, Pd and Pt supported on zirconia have been tested for the steam reforming of methane at temps. from 400°C to 800°C. Stability tests at 800°C showed that the Pt sample was the only stable catalyst, significant carbon deposition occurring on the other samples. Partial oxidation and CO<sub>2</sub> reforming of methane were also carried out over the Pt/ZrO<sub>2</sub> catalyst and this material was found to be quite stable under the conditions for these reactions. Addnl. CO<sub>2</sub> reforming and partial oxidation expts. were carried out using feeds to which steam was added. The H<sub>2</sub>/CO ratio could be manipulated, depending on the feed composition used. The addition of steam during partial oxidation gave a much more stable temperature profile through the catalyst bed than was obtained under pure partial oxidation conditions.

ACCESSION NUMBER: 1998:423675 CAPLUS  
 DOCUMENT NUMBER: 129:111074  
 TITLE: Synqas production from natural gas using ZrO<sub>2</sub>-supported metals  
 AUTHOR(S): Hegarty, M. E. S.; O'Connor, A. M.; Ross, J. R. H.  
 CORPORATE SOURCE: Centre for Environmental Research, University of Limerick, Limerick, Ire.  
 SOURCE: Catalysis Today (1998), 42(3), 225-232  
 CODEN: CATTEA; ISSN: 0920-5861  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 10  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 161 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
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AB Title catalysts giving the copolymers with wide composition range and high randomness comprise (A) organic aluminum oxy compds. or org B compds. and (B) ZpM3Cp4R2Cp3M1(X)nCp1R1Cp2M2Ym [M1 = Sc, Y, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, lanthanide transition metals; M2 = Mn, Tc, Re, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, Hg; M3 = transition metals; Cp1-Cp4 = (substituted) cyclopentadienyl; R1-R2 = direct bonds or divalent groups which contain C, Si, Sn, Ge, P, or S; X, Y, Z = hydrocarbon group, H, halo, groups which contain N, O, Si, P, or S, in which one pair of X/Y, one pair of Y/Z, or one pair of X/Z may be O, S, and divalent bonds which contain ≥1 atoms selected from O, C, N, Si, Ge, P, and S; m, p = 1-5, n = 1-4]. Methods to prepare the copolymers by using the catalysts and transition metal compds. QqM4Cp5R3Cp6M5Gg [M4 = Ti, Zr, Hf; M5 = Mn, Fe, Ru, Rh; Cp5-Cp6 = (substituted) cyclopentadienyl; R3 = (substituted) alkylene, (substituted) silylene; Q = alkoxyl, alkyl, amino, silyl, halo, H; G = cyclopentadienyl, cyclooctadienyl, norbornadienyl, alkylsulfone, arylsulfone, CO; q, g = 1-5] are also claimed. Thus, ethylene was polymerized in the presence of 5.8 mg I, 10 mL styrene, 15 mL toluene, and 1.25 mmol methylaluminoxane at 40° for 30 min to give 44:56 ethylene-styrene copolymer with complete randomness and glass transition-temperature 26° in the yield of 7.1 g/gmol-catalyst-h.

ACCESSION NUMBER: 1998:402812 CAPLUS  
 DOCUMENT NUMBER: 129:82078  
 TITLE: Metallocene catalysts for preparation of α-olefin-aromatic vinyl compound copolymers, preparation of the copolymers, and transition metal compounds  
 INVENTOR(S): Mukoyama, Mitsuaki; Mitani, Makoto; Hayakawa, Michiya;  
 YAMADA, Toru  
 PATENT ASSIGNEE(S): Mitsui Petrochemical Industries, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

L38 ANSWER 161 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 PATENT NO. KIND DATE APPLICATION NO. DATE  
 JP 10168112 A2 19980623 JP 1996-336085 19961216  
 PRIORITY APPLN. INFO.: JP 1996-336085 19961216

OTHER SOURCE(S): MARPAT 129:82078

L38 ANSWER 162 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The mechanism of dissociation of methanol and its reactions with oxygen on transition metal surfaces, Ag(111), Cu(111), Pd(111), Ni(111) and Pt(111), are analyzed by the Bond-Order-Conservation-Morse-Potential (BOC-MP) approach. It is shown that the cleavage of the C-O bond or C-H bond of methanol may take place, resulting the formation of the CHx (x = 2, 3) species. However, in the presence of oxygen, the methanol is directly oxidized to formaldehyde. The calcn. values of activation barrier by BOC-MP approach are in good agreement with the exptl. values. The results showed that the HCOH is very easily oxidized into CO or CO<sub>2</sub> on the surface of Ni, Pd, Pt, Cu and Ag. So, the very small amount of oxygen must be controlled for the system oxidizing methanol to formaldehyde by transition metal catalysts. The easy order is Ni>Pd>Pt>Cu>Ag for dissociation of methanol over transition metal catalysts. However, in very low oxygen content, the carbon deposition is more easy on Ni, Pd and Pt than Cu and Ag surface. Therefore, the Cu and Ag rather than Ni, Pd and Pt are used in the com. catalysts for the oxidation of methanol to formaldehyde.

ACCESSION NUMBER: 1998:362183 CAPLUS  
 DOCUMENT NUMBER: 129:81406  
 TITLE: BOC-MP study on the mechanism of reactions of methanol on transition metals  
 AUTHOR(S): Hei, Meijun; Cheng, Hongbo; Lin, Yiji; Hong, Qi; Lin, Yingzhong; Yi, Jun; Liao, Daiwei; Cai, Qirui  
 CORPORATE SOURCE: Institute Physical Chem., Dep. Chem., State Key Lab. Physical Chem. Solid Surfaces, Xiamen Univ., Xiamen, 361005, Peop. Rep. China  
 SOURCE: Huaxue Wuli Xuebao (1998), 11(2), 166-173  
 CODEN: HWXUE4; ISSN: 1003-7713  
 PUBLISHER: Zhongguo Kexue Jishu Daxue Chubanshe  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese

L38 ANSWER 163 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The hydrogen transfer from H donors and mol. hydrogen to aromatic hydrocarbons such as 1-methylnaphthalene (1-MN), acenaphthene, phenanthrene, anthracene, pyrene and di(1-naphthyl)methane (DNM) was studied under pressurized N or H in the temperature range of 300-425°. In noncatalytic runs, H transfer is easier from tetralin (THN) than from decalin (DHN) to some substrates. Only anthracene hydrogenation proceeded at 300° even in DHN, whereas the H transfer from THN to 1-MN and acenaphthene did not occur even at 425°. The reactivities of the polycyclic arenes toward hydrogenation increased in the order: 1-MN, acenaphthene < phenanthrene < pyrene < anthracene, which can be interpreted in terms of the superdelocalizabilities of the substrates. The extent of H transfer during thermal dissoln. step in coal liquefaction can be inferred from the above facts to be related not only to the abilities of the solvents to donate H, but also to the H acceptabilities of aromatic rings rings in coal and coal-derived radical fragments.

Metallic Fe, Ni, Pd/C, Cu, Al and Cu were used for catalytic reaction. The catalytic activities for the hydrogenation of 1-MN and DNM increased in the order: Fe < Ni < Pd/C, whereas Cu, Al and Cu show no catalytic activity. The addition of S or H donors such as THN and 9,10-dihydroanthracene inhibited catalytic hydrogenation of the substrates, but S addition promote catalytic hydrocracking of DNM.

ACCESSION NUMBER: 1998:361550 CAPLUS  
 DOCUMENT NUMBER: 129:42516  
 TITLE: Hydrogen transfer from hydrogen donors and molecular hydrogen to aromatic hydrocarbons  
 AUTHOR(S): Shen, Kai; Zhai, Fumin; Qin, Zhihong; Zong, Zhimin; Wei, Xianrong  
 CORPORATE SOURCE: Department of Energy Utilization & Chemical Engineering, China University of Mining and Technology, Xuzhou, 221008, Peop. Rep. China  
 SOURCE: Proceedings - Annual International Pittsburgh Coal Conference (1997), 14th, P7/71-P7/72  
 CODEN: PRCNE4; ISSN: 1075-7961  
 PUBLISHER: Pittsburgh Coal Conference, University of Pittsburgh  
 DOCUMENT TYPE: Journal; (computer optical disk)  
 LANGUAGE: English

L38 ANSWER 165 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 20 refs. on coupling reactions catalyzed by Pd, Ni, Cu, Ti, Zr, Ru, and other metallic compds.

ACCESSION NUMBER: 1998:326578 CAPLUS  
 DOCUMENT NUMBER: 128:308036  
 TITLE: Development of coupling reactions catalyzed by metallic compounds  
 AUTHOR(S): Li, Zheng; Qian, Yanlong  
 CORPORATE SOURCE: Organometallic Chem. Lab., Huadong Univ. Sci. Technol., Shanghai, 200237, Peop. Rep. China  
 SOURCE: Huaxue Tongbao (1997), (11), 1-10  
 CODEN: HHTPAU; ISSN: 0441-3776  
 PUBLISHER: Kexue Chubanshe  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Chinese

L38 ANSWER 164 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title method involves forming a mask film having holes for introducing a catalyst on an amorphous Si film, forming a film containing the catalyst in the holes, carrying out the lateral growth of the amorphous film by heating, and heating at 450-700 °C in a gas containing O2 and a halogen compound to remove the catalyst. Specifically, the catalyst may comprise Ni, Pd, Pt, Cu, Ag, Au, In, Sn, P, As, or Sb.

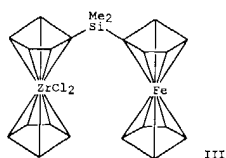
ACCESSION NUMBER: 1998:334147 CAPLUS  
 DOCUMENT NUMBER: 128:315460  
 TITLE: Formation of crystalline silicon semiconductor film  
 INVENTOR(S): Yamazaki, Shunpei; Otani, Hisashi  
 PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd. (SEL), Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10135137	A2	19980522	JP 1996-307445	19961031
TW 399227	B	20000721	TW 1997-86114783	19971008
CN 1186326	A	19980701	CN 1997-125255	19971031
US 6027987	A	20000222	US 1997-962234	19971031
CN 1257303	A	20000621	CN 1999-123419	19991029
CN 1124641	B	20031015		

PRIORITY APPL. INFO.: JP 1996-307445 A 19961031

L38 ANSWER 166 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB This paper presents a detailed theor. treatment of the partial oxidation of methane to syngas (OMS) on transition and coinage metal (M) catalysts (M = Ni, Pd, Pt, Cu). The adsorption energies for a number of intermediates in the dissociation of methane on the metals were calculated using medium sized cluster models of 7-13 atoms. Reaction energies for methane dissociation, syngas formation, and byproduct generation were determined. The activation energies were estimated by means of the analytic BOC-MP formula. On the basis of these results, several significant aspects involved in the OMS on the metal catalysts have been elucidated. The total dissociation energy (De) for the complete dissociation of methane to give surface carbon and hydrogen (CH4,s + Cs + 4Hs) can be regarded as a measure for the activity of the metal in methane dissociation. The order of the calculated De's is consistent with the order of methane conversions over the metals. In the presence of coadsorbed oxygen, oxygen at metal on-top site increases the adsorption energy of H and promotes methane dehydrogenation. Oxygen at the hollow site may or may not promote methane dehydrogenation, depending on the metal. For the possible reactions for the coupling of the intermediates on the metal surfaces, CHx,s + CHx,s + C2H2x,s, the trend in the calculated combination energies is in agreement with exptl. observation.

ACCESSION NUMBER: 1998:282810 CAPLUS  
 DOCUMENT NUMBER: 128:284331  
 TITLE: A Detailed Theoretical Treatment of the Partial Oxidation of Methane to Syngas on Transition and Coinage Metal (M) Catalysts (M = Ni, Pd, Pt, Cu)  
 AUTHOR(S): Au, Chak-Tong; Liao, Meng-Sheng; Ng, Ching-Fai  
 CORPORATE SOURCE: Department of Chemistry, Hong Kong Baptist University,  
 Kowloon, Hong Kong  
 SOURCE: Journal of Physical Chemistry A (1998), 102(22), 3959-3969  
 CODEN: JPACAF; ISSN: 1089-5639  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 75  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT



AB Title **catalysts** comprise (A) transition metal compds. of  
ZpM3Cp4R2Cp3M1(Xn)Cp1R1Cp2M2Ym (I) or XnM1Cp1R1Cp2M2Ym (II) [M1 = Sc, Y,  
Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, lanthanoid; M2 = Mn, Tc, Re, Fe, Ru,  
Os,  
Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag,  
Au, Zn, Cd, Hg; M3 = transition metal; Cp1-4 =  
(substituted) cyclopentadienyl skeleton-having group; R1-2 = single bond,  
divalent group containing C, Si, Sn, Ge, P, or S; X, Y, Z = hydrocarbyl,  
N-,  
O-, Si-, P-, or S-containing group, halogen, H; X and Y, Y and Z, or X  
and Z  
may form exo, thio, or divalent groups containing O, C, N, Si, Ge, P,  
and/or  
S; n = 1-4 (in I), 1-5 (in II); m = 1-5; p = 1-5] and (B) organic  
aluminosily  
compds. or organic B compds. Ethylene- $\alpha$ -olefin-polyene copolymers are  
manufactured by copolyng. ethylene,  $\alpha$ -olefins, and polyenes in the  
presence of the **catalysts**. Thus, ethylene, propylene, and  
2-ethylidene-5-norbornene were copolynd. in the presence of transition  
metal compound III, Me3Al, and triphenylcarbonium  
tetrakis(pentafluorophenyl)borate to give a polymer (mol. weight 17.4 +  
104) at polymerization activity 7180 g-polymer/mmol-catalyst-h.  
ACCESSION NUMBER: 1998:274925 CAPLUS  
DOCUMENT NUMBER: 129:4984  
TITLE: Metallocene polymerization **catalysts** and  
method for manufacture of ethylene- $\alpha$ -olefin-  
polyene copolymers with high molecular weight  
INVENTOR(S): Mukoyama, Mitsuki; Mitani, Makoto; Hayakawa,  
Michiya;  
PATENT ASSIGNEE(S): Yamada, Toru  
SOURCE: Mitsui Petrochemical Industries, Ltd., Japan  
Jpn. Kokai Tokkyo Koho, 18 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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AB A semi-empirical model has been presented for studying the effect of  
the surface segregation and local environment on the catalytic activity of  
the  
PdNi(111) surface for CO hydrogenation. Large Pd segregation to the  
surface has been found to affect the activation barrier for dissociation  
of  
mols. on the surface. It also affects the activation barriers for  
different reaction steps in the CO hydrogenation process to form methanol  
on the Pd-Ni surface. It is argued that for the  
Pd-Ni system, hydrogenation of the adsorbed HCOs species  
is the rate-limiting step. It has then been shown that an addition of  
even 5  
at% of Pd in bulk Ni may increase the activity by as much as four orders  
of magnitude. So far as the local environmental effect is concerned, it  
is found that the most active centers for the HCOs hydrogenation step are  
the center hollow sites having three-fold symmetry with 3 Pd atoms as  
nearest neighbors followed by center hollow sites with two Pd atoms and  
one Ni atom as nearest neighbors.  
ACCESSION NUMBER: 1998:220697 CAPLUS  
DOCUMENT NUMBER: 128:321316  
TITLE: Effect of surface segregation on the catalytic  
activity of alloys: CO hydrogenation on Pd-  
Ni(111) surface  
AUTHOR(S): Khanra, B. C.; Bertolini, J. C.; Roussel, J. L.  
CORPORATE SOURCE: Saha Institute of Nuclear Physics, Calcutta, 700064,  
India  
SOURCE: Journal of Molecular Catalysis A: Chemical (1998),  
129(2-3), 233-240  
CODEN: JMCCE2; ISSN: 1381-1169  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR  
THIS  
FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

AB The title powders involve porous coatings of T oxides (T = Zn,  
Al, Ga, and/or Cr) on ultrafine powders containing M (oxides) (M = Cu,  
Ag, Au, Ni, Pd, Pt, Fe, Co, Rh, and/or Ru)  
and optional Q (oxides) (Q = Al, Ga, Cr, and/or Si where Q = Al, Ga,  
and/or Cr when T = elements other than Al, Ga, and/or Cr). The T  
elements  
accelerate the **catalyst** activity of M elements. The  
**catalysts**, showing high purity, activity, and long life, comprise  
the powders. The **catalysts** are useful for hydrogenation of CO2  
to prepare MeOH (I) or its reverse reaction (i.e. steam reforming  
reaction).  
The powders are prepared by these steps: evaporating materials  
containing M (and Q),  
dispersing as-prepared ultrafine powder cores in solns. containing T  
ions to  
precipitate T hydroxides on the powders, and dehydrating. The cores may  
be prepared by arc plasma of M (or M-Q) alloys in inactive atms. containing  
oxidizing gases. The T hydroxides may be precipitated by dispersing the  
core  
powders in aqueous solns. containing T salts, neutralizing with alkali,  
and  
dehydrating. Thus, a Al-Cu-O core powder was prepared by arc  
melting of Al-Cu alloy in He/O atmospheric, dispersed in Zn  
(NO3)2 aqueous solution, coated with Zn(OH)2 precipitate by dropwise  
addition of  
NH4OH, and dehydrated at 85° to give a composite powder. Mixed gas  
of 3:1 H2/CO2 was treated at 523 K in the presence of 0.1 g of the  
composite powder to give I at **catalyst** activity 820 g-MeOH/kg-  
**catalyst**-h, CO2 conversion degree 23.1%, and MeOH selectivity  
33.6%.  
ACCESSION NUMBER: 1998:197761 CAPLUS  
DOCUMENT NUMBER: 128:258716  
TITLE: Composite ultrafine powders for **catalysts**  
for methanol synthesis or steam reforming and their  
preparation  
INVENTOR(S): Yamaguchi, Shoshi; Kobayashi, Masayuki; Fukui, Hideo;  
Arakawa, Hironori; Okabe, Kiyomi; Sayama, Kazuhiro;  
Kusama, Hitoshi  
PATENT ASSIGNEE(S): Agency of Industrial Sciences and Technology, Japan;  
Y.K.K. Co., Ltd.  
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 10080636	A2	19980331	JP 1996-260352	19960909
PRIORITY APPLN. INFO.:			JP 1996-260352	19960909

L38 ANSWER 170 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Hydrogen adsorption-desorption processes on Pt-, Pd-, Ni-, Ni-Cu, and Ni-Cr-containing applied catalysts with gumbein supporter have been studied. For Ni-, Ni-Cu, and Ni-Cr-containing samples hydrogen desorption takes place at low temperature with low activation energy (region I) and with high activation energy at high temperature (II). Two forms on bonded hydrogen with comparatively weak (I) and strong (II) coupling with the surface of the catalyst are created during adsorption. Differences in hydrogen desorption rate and Ni crystallite sizes (assessed by XPS method) explain the different activity of mentioned catalysts in hydration of citromellal. Only strong-coupled hydrogen presents on the surface of Pt- and Pd- containing catalysts.

ACCESSION NUMBER: 1998:188763 CAPLUS  
 DOCUMENT NUMBER: 128:185137  
 TITLE: Study of several metal-containing applied catalysts by hydrogen adsorption method  
 AUTHOR(S): Tsitsishvili, V.; Chivadze, V.  
 CORPORATE SOURCE: Georgia  
 SOURCE: Bulletin of the Georgian Academy of Sciences (1996), 153(3), 388-390  
 CODEN: BGASFC  
 PUBLISHER: Georgian Academy of Sciences  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 171 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 233 refs.  
 ACCESSION NUMBER: 1998:128818 CAPLUS  
 DOCUMENT NUMBER: 128:179942  
 TITLE: Palladium- or nickel-catalyzed cross-coupling with organometals containing zinc, magnesium, aluminum, and zirconium  
 AUTHOR(S): Negishi, Ei-Ichi; Liu, Fang  
 CORPORATE SOURCE: Department of Chemistry, Purdue University, West Lafayette, IN, 47907, USA  
 SOURCE: Metal-Catalyzed Cross-Coupling Reactions (1998), 1-47.  
 Editor(s): Diederich, Francois; Stang, Peter J.  
 Wiley-VCH Verlag GmbH: Weinheim, Germany.  
 CODEN: 65QYAP  
 CONFERENCE: General Review  
 LANGUAGE: English  
 REFERENCE COUNT: 234 THERE ARE 234 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 172 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Simultaneous reduction of carbon dioxide and nitrite ions was examined at the gas-diffusion electrodes with various catalysts (Cr, Mo, Mn, Ru, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, In, Ti, Sn, and Pb). The formation of urea, CO, formic acid, and ammonia at the gas-diffusion electrodes with the catalysts of groups 11-14 was found on the simultaneous reduction. The maximum current efficiency (c.e.) of urea formation of Cd catalysts is approx. 55% at -1.0 V. The formation of urea at the gas-diffusion electrodes with the catalysts of groups 6-10, except Pd, was not found for the simultaneous reduction of CO2 and nitride. Relationship of the ability of urea formation to the ability of CO and NH3 formation was investigated at various catalysts. The c.e. of urea increases with increasing the c.e. of CO and NH3 on the reduction of CO2 alone and nitrite ions alone, resp. Hence, the ability of urea formation at the catalysts depends on the ability of CO and NH3 formation. The catalysts with the high ability of CO and NH3 formation could form large amts. of CO-like and ammonia-like precursors. Urea would be formed from both the ammonia-like precursor formed from nitrite ions, and the CO-like precursor formed from CO2 at the groups 11-14 catalysts.

ACCESSION NUMBER: 1998:95911 CAPLUS  
 DOCUMENT NUMBER: 128:222842  
 TITLE: Electrochemical synthesis of urea at gas-diffusion electrodes. III. Simultaneous reduction of carbon dioxide and nitrite ions with various metal catalysts  
 AUTHOR(S): Shibata, Masami; Yoshida, Kohji; Furuya, Nagakazu  
 CORPORATE SOURCE: Dep. Applied Chem., Fac. Engineering, Yamanashi Univ.,  
 Kofu, 400, Japan  
 SOURCE: Journal of the Electrochemical Society (1998), 145(2), 595-600  
 CODEN: JESQAN; ISSN: 0013-4651  
 PUBLISHER: Electrochemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L38 ANSWER 173 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A small part of the total catalytic surface present, preferably <5% of the surface, is held permanently at a temperature level which is higher than that of the environment by introducing energy via a heating device. This surface part acts as a initial igniter for a H2-O2 reaction in a catalytic recombination or ignition device. Such an arrangement is useful in a loss-of-coolant accident in a nuclear power reactor. The catalyst can be a Pd alloy containing at least 80 wt% Pd with varying amts. of Ni and Cu.

ACCESSION NUMBER: 1998:59200 CAPLUS  
 DOCUMENT NUMBER: 128:81152  
 TITLE: Method and device for initiating a hydrogen-oxygen reaction in a reactor containment vessel  
 INVENTOR(S): Eckardt, Bernd; Hill, Axel  
 PATENT ASSIGNER(S): Siemens A.-G., Germany  
 SOURCE: Ger., 10 pp.  
 CODEN: GWXXAW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19636555	C1	19980115	DE 1996-19636555	19960909
WO 9811561	A1	19980319	WO 1997-DE1861	19970827
W: BG, CN, CZ, HU, JP, KR, RU, SI, UA, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 923776	A1	19990623	EP 1997-941830	19970827
EP 923776	B1	20020918		
R: CH, DE, ES, FR, GB, LI, SE, SI, FI				
CN 1228870	A	19990915	CN 1997-197587	19970827
CN 1124620	B	20031015		
JP 2001500262	T2	20010109	JP 1998-513121	19970827
RU 2187853	C2	20020820	RU 1999-107564	19970827
ES 2183213	T3	20030316	ES 1997-941830	19970827
BG 63136	B1	20010430	BG 1999-103229	19990305
US 6491877	B1	20021210	US 1999-265152	19990309
PRIORITY APPL. INFO.:			DE 1996-19636555	A 19960909
			WO 1997-DE1861	W 19970827



L38 ANSWER 174 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Dimensional changes of the high-temperature proton conductor Ba<sub>3</sub>Ca<sub>1.8</sub>Nb<sub>1.8</sub>O<sub>9-8</sub>, when exposed to D<sub>2</sub>O vapor, were investigated using length-change and precision d. measurements. Such information is essential for possible applications of proton conductors in solid oxide fuel cells and humidity and hydrogen sensors. A linear increase of the sample lengths with increases in the deuterium content was observed. Comparison of the present D<sub>2</sub>O data with those that were previously obtained for H<sub>2</sub>O showed that there was a small isotope effect in the lattice expansion. The fact that the length-change-vs.-hydrogen-isotope-concentration curves were almost isotope independent supported the validity of the take-up reaction according to Wagner classic equation (1996). In regard to the this equation, it was found that small islands of silver, palladium, nickel, and platinum act as catalytic promoters of the reaction and lead, for given heavy-water-steam exposure conditions, to an increase of water absorption of up to 100%, when compared with samples without the catalytic surface layers.

ACCESSION NUMBER: 1998:32507 CAPLUS  
 DOCUMENT NUMBER: 128:131285  
 TITLE: Heavy-water (D<sub>2</sub>O) take-up-induced lattice expansion in the high-temperature proton conductor Ba<sub>3</sub>Ca<sub>1.8</sub>Nb<sub>1.8</sub>O<sub>9-8</sub>  
 AUTHOR(S): Papathanassopoulos, Konstantinos; Wenzl, Helmut; Schöber, Tilman  
 CORPORATE SOURCE: Inst. für Festkörperforschung, Jülich, 52425, Germany  
 SOURCE: Journal of the American Ceramic Society (1997), 80(12), 3278-3280  
 CODEN: JACTAW; ISSN: 0002-7820  
 PUBLISHER: American Ceramic Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 5  
 FORMAT

THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

L38 ANSWER 176 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The surfaces of Ni electrodes that were promoted by a contact deposition of Pd or a Pd-Cd composition were examined using cyclic voltammetry. The deposition of Pd gives finely divided deposits, providing a higher electrocatalytic activity of such electrodes in reactions involving H<sub>2</sub>O<sub>2</sub>. The composition of the surface of the electrodes was studied using XPS.

Pd microdeposits on Ni possess an excess pos. charge; after Ni oxidation, especially in contact with oxidized Cd, these deposits possess an excess neg. charge. The modification by a Pd-Cd composition leads to changes in the chemical composition of the surface and to an intense metal-oxide interaction within the Ni-Pd-Cd system, which ensures a high activity and stability of such electrocatalysts.

ACCESSION NUMBER: 1997:65338 CAPLUS  
 DOCUMENT NUMBER: 127:338496  
 TITLE: Mechanism of interaction of the components in catalysts for electroreduction of hydrogen peroxide: modifying nickel with palladium and a palladium-cadmium composition  
 AUTHOR(S): Akulova, G. V.; Druz, S. V.; Skundin, A. M.; Tkachenko, O. P.; Shpiro, E. S.  
 CORPORATE SOURCE: Sokol'skii Institute of Organic Catalysis and Electrochemistry, Academy of Sciences of Kazakhstan, Almaty, Kazakhstan  
 SOURCE: Russian Journal of Electrochemistry (Translation of Elektrokhimiya) (1997), 33(9), 998-1002  
 CODEN: RUELE3; ISSN: 1023-1935  
 PUBLISHER: MATEK Nauka/Interperiodica  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 175 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Disclosed is a new method for preparing supported metal catalysts with eggshell active metal profile. The organometallic compds. with metal as Pd, Ni, Co, Mo, Cu, Pt, Fe, Ag, Ir, Pb, Ti, Sn, V, and Zn, etc., are dissolved in a pure organic solvent, such as benzene, toluene, xylene, methanol, ethanol, and THF, etc., and/or an organic solvent mixture thereof. The catalyst precursors (i.e., the reactive metal of the prepared organic or inorg. metal concentrated solution) are carried to the surface of MgO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, TiO<sub>2</sub>, ZrO<sub>2</sub>, zeolite, active carbon, and polymer support by wet impregnation and/or spray method. The metal concentration profile and metal loading can be precisely controlled by choosing suitable solvent and/or operation conditions.

ACCESSION NUMBER: 1997:682856 CAPLUS  
 DOCUMENT NUMBER: 127:268520  
 TITLE: Eggshell catalyst and process for preparing of the same  
 INVENTOR(S): Lin, Tzong-Bin; Chou, Tse-Chuan; Tsai, Kun-Yung  
 PATENT ASSIGNEE(S): Chinese Petroleum Co, Taiwan  
 SOURCE: Brit. UK Pat. Appl., 31 pp.  
 CODEN: BAXXDU  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2310384	A1	19970827	GB 1996-3728	19960222
FR 2744652	A1	19970814	FR 1996-1750	19960213
FR 2744652	B1	19980410		
CA 2170330	AA	19970827	CA 1996-2170330	19960226
			GB 1996-3728	19960222
			DE 1996-19607437	19960228

PRIORITY APPLN. INFO.:

L38 ANSWER 177 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Claimed process comprises following steps: dissolving organometal compds. or inorg. metal compds. containing Pd, Ni, Co, Mo, Cu, Pt, Fe, Ag, Ir, Pb, Re, Ti, Sn, V, Zn, etc. in organic solvents or their mixed solvents; wet permeation or spraying the solns. on outer layers of articles containing Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, zeolite, TiO<sub>2</sub>, ZrO<sub>2</sub>, MgO, activated C, polymers, etc. for coating active metals; controlling permeation time or concentration of the permeation solns. to give desired film thickness and metal content; controlling metal dispersion degree by baking temperature. Resulting catalysts have desired shell thickness, metal content, and dispersion degree.

ACCESSION NUMBER: 1997:587330 CAPLUS  
 DOCUMENT NUMBER: 127:253578  
 TITLE: Manufacture of egg-shell metal catalyst.  
 INVENTOR(S): Rin, Tsun Bin; Tzu, Tzu Chuan; Tswai, Kun Yon  
 PATENT ASSIGNEE(S): Chongkuo Suyu Kfun Yushen Cons, Taiwan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09225305	A2	19970902	JP 1996-67210	19960227

PRIORITY APPLN. INFO.:

L38 ANSWER 178 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A photocatalyst comprises an oxide ion into which the metal ion of at least one kind of the metal selected from the group consisting of Cr, V, Cu, Fe, Mg, Ag, Pd, Ni, Mn and Pt is introduced, wherein the metal ion exists in a portion from the surface into the inside of titanium oxide at a proportion of at least 1 x 1015 ions/g-titanium oxide. This invention discloses also a production method of the photocatalyst and a photocatalytic reaction method using this catalyst.

ACCESSION NUMBER: 1997:513593 CAPLUS  
 DOCUMENT NUMBER: 127:197686  
 TITLE: Photocatalyst, method of producing the photocatalyst, and photocatalytic reaction method  
 INVENTOR(S): Anpo, Masakazu; Yamashita, Hiromi; Kanai, Sakunobu; Sato, Kazuhito; Fujimoto, Takanori  
 PATENT ASSIGNEE(S): Petroleum Energy Center, Japan  
 SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9726991	A1	19970731	WO 1997-JP135	19970122
W: US				
RW: DE, FR, GB				
JP 09262482	A2	19971007	JP 1996-311176	19961108
EP 818239	A1	19980114	EP 1997-900755	19970122
EP 818239	B1	20030806		
R: DE, FR, GB				
EP 1340540	A1	20030903	EP 2003-12244	19970122
R: DE, FR, GB				
US 6077492	A	20000620	US 1997-894552	19970821
PRIORITY APPLN. INFO.:			JP 1996-26213	A 19960122
			JP 1996-311176	A 19961108
			EP 1997-900755	A3 19970122
			WO 1997-JP135	W 19970122

L38 ANSWER 180 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The anodic oxidation of the C felt Carbonetcalon gave surface defects which serve as centers of strong adsorption of PdII, NiII, and CuII ions. The electrochem. reduction of adsorbed ions makes it possible to obtain metallic catalysts, which undergo multiple redox cycles without loss of metal. The catalysts were characterized by high dispersity of the reduced phase, high adsorption capacity with respect to H, and 100% selectivity in hydrogenation of acetophenone.

ACCESSION NUMBER: 1997:406157 CAPLUS  
 DOCUMENT NUMBER: 127:168052  
 TITLE: Adsorption of Pd, Ni, and Cu ions on anode-oxidized carbon fiber materials  
 AUTHOR(S): Vedenyapin, A. A.; Baturova, M. D.; Ioseliani, G. I.; Areshidze, G. Kh.  
 CORPORATE SOURCE: N. D. Zelinsky Institute Organic Chemistry, Russian Academy Sciences, Moscow, 117913, Russia  
 SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1997), 46(1), 76-80  
 CODEN: RCBUEY; ISSN: 1066-5285  
 PUBLISHER: Consultants Bureau  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 179 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A nonconductive substrate (especially a polymer) is contacted with a solution of a precious metal compound to absorb the metal ions on the surface, followed by reduction treatment of the metal ions to obtain a catalytic surface free of conventional Sn, and coating the substrate with another metal in electroless bath. The catalytic metals are selected from Pt, Pd, Au, Ag, Ru, Rh, Os, and/or Ir, using their salts or complexes in suitable solvents for the initial application on a cleaned substrate surface. The process is suitable for electroless metal coating of polymer substrates (including fibers or yarns) with Ti, Pd, Ni, Cu, Co, Fe, Au, and/or Pt. The coated articles are free of Sn residue from conventional surface preparation, and can be biocompatible for medical applications.

ACCESSION NUMBER: 1997:512003 CAPLUS  
 DOCUMENT NUMBER: 127:125041  
 TITLE: Catalytic surface preparation for electroless deposition of metal coatings on nonconducting substrates  
 INVENTOR(S): Paulose, Kannai; Anderson, Neil Lawrence; Stevens, Michael George; Driver, Robert  
 PATENT ASSIGNEE(S): Cardiac Crc Nominees Pty., Ltd., Australia  
 SOURCE: PCT Int. Appl., 22 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9721849	A1	19970619	WO 1996-AU789	19961206
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, FR, GB, GE, GR, HU, IL, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9676874	A1	19970703	AU 1996-76874	19961206
AU 696951	B2	19980924		
EP 865515	A1	19980923	EP 1996-939770	19961206
R: DE, FR, GB, IT				
JP 2000502148	T2	20000222	JP 1997-521546	19961206
PRIORITY APPLN. INFO.:			AU 1995-7051	19951208
			WO 1996-AU789	19961206

L38 ANSWER 181 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A theor. comparative study of methane dissociation on Ni, Pd, Pt and Cu metal (111) surfaces has been carried out using a quasirelativistic d. functional method. Reaction energies for the steps involved in the dissociation of methane are determined. The activation energies have been estimated using the analytic BOC-MP formula. The results support the notion that the transition metals are active in methane dissociation. The calculated total dissociation energies for the complete dissociation of CH4 to surface C and H on the transition metals fall in the order Ni < Pd ~ Pt, which corresponds to the order of the catalytic activities over the metals in methane conversion (Ni > Pd ~ Pt). The complete dissociation on Cu is calculated to be endothermic. Thus methane dissociation on a Cu catalyst is unlikely, in agreement with the exptl. observations. The dissociation of methane in the presence of adsorbed oxygen has also been examined.

ACCESSION NUMBER: 1997:401977 CAPLUS  
 DOCUMENT NUMBER: 127:121383  
 TITLE: Methane dissociation on Ni, Pd, Pt and Cu metal (111) surfaces - a theoretical comparative study  
 AUTHOR(S): Liao, Meng-Sheng; Au, Chak-Tong; Ng, Ching-Fai  
 CORPORATE SOURCE: Department of Chemistry, Hong Kong Baptist University, Kowloon, Hong Kong  
 SOURCE: Chemical Physics Letters (1997), 272(5,6), 445-452  
 CODEN: CHPLSC; ISSN: 0009-2614  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 182 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Alumina membranes modified by Pd-M (M = Ru, Rh, Ni, **Ag**) and Pd were prepared by the sol-gel method, and characterized by SEM, XRD and N adsorption. The single or binary metals were highly dispersed in alumina. The average pore diams. of binary metals modified membranes were 4-7 nm, which was a bit smaller than that for Pd single metal-modified alumina membrane. The H<sub>2</sub>/N<sub>2</sub> gas separation tests showed that the separation factor of the gaseous mixture exceeded the Knudsen value (3.74). The dehydrogenation of EtOH to AcH was carried out in membrane reactors incorporating Pd-M and Pd modification. The yield of AcH in Pd-Ru, Pd-**Ag**, Pd-Rh modified membrane reactors was higher than that in single metal Pd modified membrane reactor, while the yield in the **Pd-Ni**/γ-Al<sub>2</sub>O<sub>3</sub> membrane reactor was lower than that in Pd/γ-Al<sub>2</sub>O<sub>3</sub> membrane reactor. At moderate reaction conditions, the yield increased by 15% in Pd-Ru modified membrane reactor compared with the thermodyn. equilibrium value. The properties and characteristics of all modified membranes were compared and discussed.

ACCESSION NUMBER: 1997:273175 CAPLUS  
 DOCUMENT NUMBER: 127:6336  
 TITLE: Catalytic dehydrogenation of ethanol in Pd-M/γ-Al<sub>2</sub>O<sub>3</sub> composite membrane reactors  
 AUTHOR(S): Cao, Yong; Liu, Bingxi; Deng, Jingfa  
 CORPORATE SOURCE: Department of Chemistry, Fudan University, Shanghai, 200433, Peop. Rep. China  
 SOURCE: Applied Catalysis, A: General (1997), 154(1-2), 129-138  
 CODEN: ACAGE4; ISSN: 0926-860X  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 183 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 47 refs. The role of Ni and Pd compound **catalysts** in the synthesis of liquid crystals, especially with starting materials containing Mg, Zn, and B, are discussed. Reactions involving Grignard reagents, organozinc, and organoboron compds. are discussed.

ACCESSION NUMBER: 1997:206145 CAPLUS  
 DOCUMENT NUMBER: 126:283176  
 TITLE: Transition metal-catalyzed cross-coupling reactions and their applications in the synthesis of liquid crystals  
 AUTHOR(S): Du, Weihong; An, Zhongwei; Xu, Maoliang  
 CORPORATE SOURCE: Xian Inst. Modern Chem., Xian, 710061, Peop. Rep. China  
 SOURCE: Fenzi Cuihua (1997), 11(1), 72-80  
 CODEN: FECUEN; ISSN: 1001-3555  
 PUBLISHER: Zhongguo Kexueyuan Lanzhou Huaxue Wuli Yanjiusuo  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Chinese

L38 ANSWER 184 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Electrochem. reduction of CO<sub>2</sub> was studied under high pressure on Co, Rh, Ni, Pd, Pt, **Ag**, and Cu electrocatalysts supported in the gas diffusion electrode (GDE). CO was produced on Pd and **Ag catalysts** at faradaic efficiencies of 58 and 86%, resp., at 300 mA cm<sup>-2</sup> under CO<sub>2</sub> 20 atmospheric. In the case of Cu-GDE, CO and formic acid were produced as the main reduction products. H<sub>2</sub> was the predominant reduction product in the electrolyses using other GDE. Effects of the CO<sub>2</sub> pressure, the c.d., and the passed charge in the electrochem. reduction of CO<sub>2</sub> using Pd and **Ag**-GDEs were studied. The maximum partial c.d. of CO formed on the Pd-GDE under CO<sub>2</sub> 20 atm was 450 mA cm<sup>-2</sup>. A very large partial c.d. of CO formation of 3.05 A cm<sup>-2</sup> was achieved in the electrolysis under 30 atm on the **Ag**-GDE.

ACCESSION NUMBER: 1997:199236 CAPLUS  
 DOCUMENT NUMBER: 126:322345  
 TITLE: Large current density CO<sub>2</sub> reduction under high pressure using gas diffusion electrodes  
 AUTHOR(S): Hara, Kohjiro; Sakata, Tadayoshi  
 CORPORATE SOURCE: Dep. Electronic Chem., Interdisciplinary Grad. Sch. Sci. and Eng., Tokyo Inst. Tech., Yokohama, 226, Japan  
 SOURCE: Bulletin of the Chemical Society of Japan (1997), 70(3), 571-576  
 CODEN: BCSJAB; ISSN: 0009-2673  
 PUBLISHER: Nippon Kagakukai  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L38 ANSWER 185 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The nitriles, useful, as intermediates for the manufacture of amines, are prepared from C<sub>6</sub>-40 aliphatic alcs. and NH<sub>3</sub> at 100-250°/x100 atm in the presence of a **catalyst** containing Cu, a transition metal from the 4th Period (except Cr), and a Pt-group element in an atmospheric of H<sub>2</sub> or an inert gas with continuous removal of H<sub>2</sub>O as formed. Thus, Al<sub>2</sub>O<sub>3</sub> was stirred with an aqueous solution containing Cu nitrate, Ni nitrate, and PdCl<sub>2</sub> at Cu-Ni-Pd weight ratio 2:1:0.1, heated to 90°, treated with Na<sub>2</sub>CO<sub>3</sub> solution, filtered, dried at 100°, and calcined at 400° for 3 h to give a **catalyst**. Kalcot 80 (stearyl alc.) was converted to stearonitrile in 59% yield in the presence of 0.5 weight% of the **catalyst** at 240° in a flow of 4:1 N<sub>2</sub>-NH<sub>3</sub> at atmospheric pressure.

ACCESSION NUMBER: 1997:172356 CAPLUS  
 DOCUMENT NUMBER: 126:173351  
 TITLE: Manufacture of aliphatic nitriles from alcohols  
 INVENTOR(S): Yoshida, Wataru; Fukushima, Tetsuaki; Taniguchi, Hideki; Abe, Hiroshi  
 PATENT ASSIGNEE(S): Kao Corp., Japan  
 SOURCE: Ger. Offen., 11 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19626993	A1	19970109	DE 1996-19626993	19960704
JP 09020742	A2	19970121	JP 1995-170758	19950706
JP 3507206	B2	20040315		
US 5703264	A	19971230	US 1996-670787	19960624
CN 1145898	A	19970326	CN 1996-110788	19960706
PRIORITY APPLN. INFO.:			JP 1995-170758	A 19950706

L38 ANSWER 186 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The apparatus has a gas-phase reduction means having reduction catalysts carried on a honeycomb support for reducing CO<sub>2</sub> in waste gases from combustion of fossil fuels to CO, ethanol, and CH<sub>4</sub>. The honeycomb support is made from ceramic fibers containing Al<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> as main components, and reduction catalysts from Cu, Zn, Fe, Cr, Ni, Pd, and/or Rh are carried on the support.

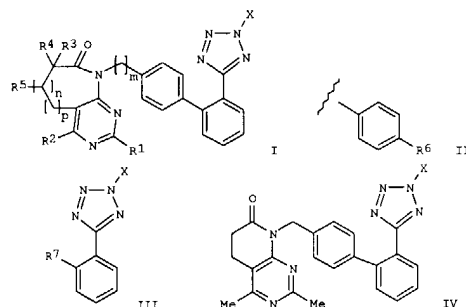
ACCESSION NUMBER: 1997:165020 CAPLUS  
 DOCUMENT NUMBER: 126:161429  
 TITLE: Apparatus for treatment of waste gases containing carbon dioxide  
 INVENTOR(S): Akahori, Hideo  
 PATENT ASSIGNEE(S): Tokyo Shibaura Electric Co, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08332346	A2	19961217	JP 1995-139358	19950606
PRIORITY APPLN. INFO.:			JP 1995-139358	19950606

L38 ANSWER 187 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A new surface science approach to the study of supported-metal catalysts will be described. Thin oxide films (approx. 100 Å) of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> or MgO supported on a refractory metal substrate (e.g., Mo, Ta, Re, or W) have been prepared by depositing the oxide metal precursor in a background of oxygen (ca. 1×10<sup>-5</sup> Torr). Metal thin films (e.g., Cu, Pd, Ni) have subsequently been deposited onto the oxide films and the properties of the metal/oxide system then studied with an array of surface techniques, including scanning tunneling microscopy (STM). By properly defining the metal thin film thickness, metal particles of varying sizes can be synthesized from the sub-nanometer range to tens of nanometers. These studies have provided access to detailed information with respect to the energetics and morphol. of small metal particles supported on oxides. Kinetic studies of CO oxidation on Pd and alkane hydrogenolysis on supported Ni will be discussed, and the effects of metal particle size and structure addressed.

ACCESSION NUMBER: 1997:160325 CAPLUS  
 TITLE: Chemical and spectroscopic studies of model supported-metal catalysts.  
 AUTHOR(S): Goodman, D. W.  
 CORPORATE SOURCE: Department Chemistry, Texas AandM University, College Station, TX, 77843-3255, USA  
 SOURCE: Book of Abstracts, 213th ACS National Meeting, San Francisco, April 13-17 (1997), COLL-091. American Chemical Society: Washington, D. C.  
 CODEN: 64AQA  
 DOCUMENT TYPE: Conference; Meeting Abstract  
 LANGUAGE: English

L38 ANSWER 188 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
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AB A process is described for preparing a compound of formula I or a salt thereof [wherein X = protecting group; R1-R4 = H, C1-6 alkyl or perfluoroalkyl; R5 = H, or when n = 1, R3R5 = pi bond; m = 1-3; n = 0 or 1; p = 0-2] by reaction of corresponding halide II [R6 = Cl, Br, or Iodo] with an organometallic compound III [X = protecting group; R7 = zinc or tin moiety such as ZnCl, ZnBr, or Sn(Cl-6 alkyl)3] in the presence of a Pd or Ni catalyst. In particular, the method is useful in the preparation of the angiotensin II antagonist and antihypertensive agent IV [X = H]. For example, the bromide III [X = tert-Bu, R7 = Br] was treated with Mg and BrCH<sub>2</sub>CH<sub>2</sub>Br in THF at 40° to give the Grignard reagent, which reacted with ZnCl<sub>2</sub> at 25-35° to give a suspension of III [X = tert-Bu, R7 = ZnCl]. This was coupled with the corresponding bromide II [R6 = Br] in THF in the presence of a catalyst [prepared from Pd(PPh<sub>3</sub>)<sub>2</sub>Cl<sub>2</sub> and DIBAL in THF], to give after workup a 78% yield of IV [X = tert-Bu].

ACCESSION NUMBER: 1997:121375 CAPLUS  
 DOCUMENT NUMBER: 126:131464  
 TITLE: Process for preparation of biphenyl derivatives by cross-coupling reaction, and application to preparation of an antihypertensive  
 INVENTOR(S): Giguere, Pierre; Iera, Silvio; Bernatchez, Michel; Barreca, Giuseppe; Castaldi, Graziano; Cannata, Vincenzo  
 PATENT ASSIGNEE(S): American Home Products Corporation, USA  
 SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent

L38 ANSWER 188 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9640684	A1	19961219	WO 1996-US9117	19960606
W: AL, AM, AU, BB, BG, BR, CA, CN, CZ, EE, FI, GE, HU, IL, IS, JP, KG, KP, KR, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5760220	A	19980602	US 1996-657490	19960604
CA 2233783	AA	19961219	CA 1996-223783	19960606
AU 9660902	A1	19961230	AU 1996-60902	19960606
AU 718553	B2	20000413		
EP 846117	A1	19980610	EP 1996-918189	19960606
EP 846117	B1	20030514		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, SI, LT, LV, FI				
CN 1192214	A	19980902	CN 1996-195896	19960606
CN 1073110	B	20011017		
BR 9609403	A	19990511	BR 1996-9403	19960606
JP 11507625	T2	19990706	JP 1996-501516	19960606
NZ 310164	A	20000128	NZ 1996-310164	19960606
IL 122220	A1	20010808	IL 1996-122220	19960606
AT 240325	E	20030515	AT 1996-918189	19960606
ZA 9604865	A	19971208	ZA 1996-4865	19960607
TW 480257	B	20020321	TW 1996-85106776	19960805
US 3977372	A	19991102	US 1998-32129	19980227
PRIORITY APPLN. INFO.:			US 1995-478592	A 19950607
			US 1996-657490	A 19960604
			WO 1996-US9117	W 19960606

OTHER SOURCE(S): CASREACT 126:131464; MARPAT 126:131464

L38 ANSWER 189 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Whereas the direct reduction of aryl triflates affords mainly phenols and some arenes, the presence of a catalytic amount of palladium or nickel results in the formation of biaryls. The homocoupling is performed in the presence of an electron source, either a cathode or zinc powder. A judicious choice of the metal (nickel or palladium), the ligand (monodentate or bidentate phosphine), and the reduction process (electrochem. or chemical) allows the synthesis of functional sym. biaryls. Nickel and palladium complexes ligated by bidentate ligands such as NiCl<sub>2</sub>(dppf) and Pd(OAc)<sub>2</sub> + 1 BINAP are very efficient for the homocoupling of 1-naphthyl triflate, since the dimer was obtained in almost quant. yield. However, the homocoupling is sensitive to steric hindrance, excluding for the moment the synthesis of atropisomers. The homocoupling proceeds via an activation of the C-O bond of the aryl triflate by a palladium(0) or a nickel(0) complex, providing an intermediate arylpalladium(II) or nickel(II) complex that, after activation by electron transfer, affords a new complex able to undergo a second oxidative addition with the aryl triflates.

ACCESSION NUMBER: 1997:113008 CAPLUS  
 DOCUMENT NUMBER: 126:103857  
 TITLE: Nickel- and Palladium-Catalyzed Homocoupling of Aryl Triflates. Scope, Limitation, and Mechanistic Aspects  
 AUTHOR(S): Jutand, Anny; Mosleh, Adil  
 CORPORATE SOURCE: Departement de Chimie, Ecole Normale Supérieure, Paris, 75231, Fr.  
 SOURCE: Journal of Organic Chemistry (1997), 62(2), 261-274  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 190 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Selective semi-hydrogenation of 1,3-butadiene has been investigated in excess of hydrogen over Co, Cu and Pd-Ni catalysts. The results on 5 weight-% Co/Al<sub>2</sub>O<sub>3</sub> and Pd-Ni/Nb<sub>2</sub>O<sub>5</sub> catalysts provide evidence that hydrocarbonaceous materials formed on these surfaces play an important role in governing the competition between 1,3-butadiene and n-butenes. Similar results have been observed on 5 weight-% Cu/SiO<sub>2</sub> modified by preadsorption of n-butylamine. On the poisoned surface hydrogenation and isomerization of n-butenes have been remarkably inhibited, but the sample remains active in semi-hydrogenation of 1,3-butadiene. It is proposed that the unusual high selectivity of alkene formation is ensured by firmly held adspecies (FHA) formed from diene or n-butylamine. FHA cover and modify metal sites and do not allow adsorption of n-butenes as they apparently cannot compete with FHA. Hydrogenation of diene has been interpreted by a compression-displacement model, in which the high strength of diene complexation plays a definite role. Butadiene pushes away FHA for reason of its high complexation strength and finds (create) reaction sites for its semi-hydrogenation. Preadsorption of CH<sub>3</sub>OH on 5 weight-% Cu/SiO<sub>2</sub> affects the region-selectivity of n-butenes: on the modified surface the selectivity of cis-2-butene increases at the expense of 1-butene. These results have been interpreted by electronic modification of Cu sites by intermediates formed from decomposition of methoxy species.

ACCESSION NUMBER: 1997:16792 CAPLUS  
 DOCUMENT NUMBER: 126:185706  
 TITLE: Semi-hydrogenation of 1,3-butadiene on adspecies modified Pd-Ni, Co and Cu catalysts  
 AUTHOR(S): Sarkany, A.  
 CORPORATE SOURCE: Institute of Isotopes of the Hungarian Academy of Sciences, P.O. Box 77, Budapest, Hung.  
 SOURCE: Applied Catalysis, A: General (1997), 149(1), 207-223  
 CODEN: ACAGE4; ISSN: 0926-860X  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L38 ANSWER 191 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Cross-linked polymer microspheres having a sulfonated cation exchange surface are carefully separated into fractions of equal size and d. Each fraction is sep. plated preferably with copper, palladium, nickel, titanium or any metal cation which will reduce with hydrazine to form a conductive metal flash coating. The flash coat plated microspheres are again separated into fractions of equal size and d. Each fraction is then given addnl. metal platings first of nickel, then preferably palladium, then a support plate for the followed preferably by a stabilizing metal plate such as chromium. The thus plated microspheres have uniformly thick platings and have a maximized surface area for the amount of metal plated making them particularly useful as catalysts or in elec. products or processes. Microspheres having a plating of palladium exhibit a marked improvement in the adsorption of hydrogen both quant. and in rapidity.

An inner nickel plating between the copper flash coat and palladium plate and an outer nickel plating atop the palladium plate serve to structurally stabilize the palladium plate during a heat production duty cycle without inhibiting hydrogen adsorption by the palladium plate.

ACCESSION NUMBER: 1996:754417 CAPLUS  
 DOCUMENT NUMBER: 126:23399  
 TITLE: Uniformly plated microsphere catalyst  
 INVENTOR(S): Patterson, James A.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S., 7 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5580838	A	19961203	US 1995-462005	19950605
WO 9640425	A2	19961219	WO 1996-US8847	19960603
WO 9640425	A3	19970130		
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LA, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
CA 2223540	AA	19961219	CA 1996-2223540	19960603
AU 9659834	A1	19961230	AU 1996-59834	19960603
AU 697004	B2	19980924		
EP 846195	A2	19980610	EP 1996-917165	19960603
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 10506575	T2	19980630	JP 1996-501327	19960603
CN 1187222	A	19980708	CN 1996-194463	19960603
PRIORITY APPLN. INFO.:				US 1995-462005 19950605
				WO 1996-US8847 19960603

L38 ANSWER 192 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The device includes an active-matrix circuit (A) and a peripheral logic circuit (B), where Si crystallization for thin film transistor in A is promoted by a selectively added catalyst and that in B is promoted by a randomly added catalyst. The device is manufactured by these steps: forming a-Si thin film on a substrate insulating surface, masking the film partially, selectively adding a catalyst promoting a-Si crystallization, and crystallizing a-Si film (partially) by thermal or photo-induced annealing. The catalyst may be Ni, Pd, Pt, Cu, Ag, and/or Fe. The manufacture provides thin film transistor for active-matrix circuit and that for peripheral logic circuit, simultaneously on the same substrate.

ACCESSION NUMBER: 1996:658679 CAPLUS  
 DOCUMENT NUMBER: 125:290783  
 TITLE: Semiconductor device with active matrix circuit and peripheral logic circuit and its manufacture  
 INVENTOR(S): Cho, Koju  
 PATENT ASSIGNEE(S): Handotai Energy Kenkyusho, Japan; Semiconductor Energy Laboratory Co., Ltd.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08213634	A2	19960820	JP 1995-284496	19951005
JP 3514891	B2	20040331		
JP 11330488	A2	19991130	JP 1999-22528	19951005
JP 2000174289	A2	20000623	JP 2000-19281	19951005
US 5942768	A	19990824	US 1997-802408	19970218
US 6211536	B1	20010403	US 1999-333920	19990616
US 2001018224	A1	20010820	US 2001-778082	20010207
US 6627487	B2	20030930		
PRIORITY APPLN. INFO.:				JP 1994-270562 A 19941007
				JP 1995-284496 A3 19951005
				US 1995-539558 B1 19951005
				US 1997-802408 A3 19970218

L38 ANSWER 193 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The **catalysts** are manufactured from Cu-, Co-, Ni-, Pd-, and/or Pt-loaded zeolites having a mol. ratio of SiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> ≥10. The zeolites may be ultrastable Y zeolites, ZSM-5 zeolites, or mordenite zeolites.

ACCESSION NUMBER: 1996:649380 CAPLUS  
 DOCUMENT NUMBER: 125:280523  
 TITLE: **Catalysts** for kerosene combustion apparatus  
 INVENTOR(S): Kato, Hiroshi; Ino, Akira  
 PATENT ASSIGNEE(S): Nippon Oil Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKKXAF

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08229406	A2	19960910	JP 1995-59969	19950223
PRIORITY APPLN. INFO.:			JP 1995-59969	19950223

L38 ANSWER 195 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The fuel cells have a cathode and an anode on the opposite sides of a solid polymer electrolyte membrane, where the anode has a multilayer **catalyst** film and a gas diffusion layer, and the electrolyte side layer of the **catalyst** film oxidizes H and the electrode side **catalyst** layer oxidizes CO. The H oxidizing **catalyst** layer contains Pt and the CO oxidizing layer contains Pt and elements selected from Ru, Sn, Os, Rh, Pd, Ni, Cu, Co, Mn, Zn, In, and Fe.

ACCESSION NUMBER: 1996:625207 CAPLUS  
 DOCUMENT NUMBER: 125:252960  
 TITLE: Solid polymer electrolyte fuel cells  
 INVENTOR(S): Uchida, Makoto; Fukuoka, Hiroko; Eda, Nobuo  
 PATENT ASSIGNEE(S): Matsushita Electric Ind Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKKXAF

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08203537	A2	19960809	JP 1995-13937	19950131
JP 3353518	B2	20021203	JP 1995-13937	19950131
PRIORITY APPLN. INFO.:			JP 1995-13937	19950131

L38 ANSWER 194 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The in situ electrochem. supply of promoters (ionic species), via current and voltage application (typically±1-2 V) on metal **catalyst** films, interfaced with solid electrolytes, can cause dramatic and reversible modifications in catalytic activity and product selectivity. The catalytic activity can be enhanced by up to a factor of 100, and the induced change in the catalytic rate is strongly nonfaradaic, i.e., up to five orders of magnitude larger than the steady-state rate of electrochem. supply of ionic species from the solid electrolyte onto the catalytic surface. This novel phenomenon was termed electrochem. promotion or in situ controlled promotion or Non faradaic Electrochem. Modification of Catalytic Activity (NEMCA) and was demonstrated for a large variety of catalytic reactions (over 40), **catalysts** (Pt, Ag, Rh, Pd, Ni, and IrO<sub>2</sub>), and solid electrolytes (O<sub>2</sub>-, F-, Na+, H+ conductors), and more recently for aqueous alkaline solns. The authors show explicitly, from XPS, TPD, and cyclic voltammetry, that NEMCA is due to the electrochem. controlled back-spillover of promoting species onto the catalytic surface and the concomitant change in **catalyst** work function and surface chemisorptive properties. This in situ controlled promotion of **catalysts** underlines the role of the electronic factor in catalysis and allows for a systematic study of the role of promoters.

ACCESSION NUMBER: 1996:649015 CAPLUS  
 DOCUMENT NUMBER: 126:24083  
 TITLE: In situ controlled promotion of **catalyst** surfaces: non-Faradaic electrochemical modification of catalytic activity  
 AUTHOR(S): Neophytides, S. G.; Bebelis, S.; Yentekakis, I. V.; Jiang, Y.; Pliangos, C.; Karavasilis, Ch.; Ladas, S.; Vayenas, C. G.  
 CORPORATE SOURCE: Department Chemical Engineering, University Patras, Patras, GR 26500, Greece  
 SOURCE: Kinetics and Catalysis (Translation of Kinetika i Kataliz) (1996), 37(5), 666-675  
 CODEN: KICAA8; ISSN: 0023-1584  
 PUBLISHER: MAIK Nauka/Interperiodica  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 196 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB **Catalysts** for the combustion of methane have been prepared by controlled oxidation of various ternary amorphous alloys with the composition X10Pd15Zr75 (X = Co, Cr, Cu, Mn and Ni). As a reference material, a Pd25Zr75 amorphous alloy was used. The oxidation of the amorphous precursors led, in some cases, to highly active **catalysts** for the deep oxidation of methane. The chemical and morphol. changes occurring during activation by oxidation in air were followed by thermal anal., X-ray diffraction and BET surface area measurements. Component X had a strong influence on these changes and consequently on the final activity of the materials. The thermoanal. studies revealed marked differences in the crystn. and oxidn. behavior of the alloys. The BET surface area of the precursor alloys was <0.1 m<sup>2</sup>/g and increased, depending on component X, to 1.1-34.1 m<sup>2</sup>/g upon oxidn. (activation) of the samples. XRD indicated the presence of PdO and poorly cryst. monoclinic and tetragonal ZrO<sub>2</sub> in all activated samples. Kinetic studies were carried out in a fixed-bed microreactor at temps. of 400-1000 K and atm. pressure using a reactant mixt. with a ratio CH<sub>4</sub>:O<sub>2</sub> = 1:4. The alloy precursors showed no significant activity mainly due to their low surface area. The activity of the activated (oxidized) alloys depended strongly on component X and decreased in the order Pd-Mn > Cu > Co > Mn > Cr. **Catalysts** derived from Pd25Zr75 and Ni10Pd15Zr75 showed relatively good catalytic stability even after ageing for 15 h at 1000 K under reaction atm., whereas the other **catalysts** showed strong deactivation at higher temps. Redn. of the **catalysts** by hydrogen with subsequent reoxidn. of the reduced components by the reaction atm. in most cases led to more active **catalysts**.

ACCESSION NUMBER: 1996:594897 CAPLUS  
 DOCUMENT NUMBER: 125:280335  
 TITLE: Methane combustion over **catalysts** prepared by oxidation of ternary Pd15X10Zr75 (X = Co, Cr, Cu, Mn and Ni) amorphous alloys  
 AUTHOR(S): Mueller, Christian A.; Koepfel, Rene A.; Maciejewski, Marek; Heveling, Josef; Baiker, Alfons  
 CORPORATE SOURCE: Department of Chemical Engineering and Industrial Chemistry, Swiss Federal Institute of Technology, ETH-Zentrum, Zurich, CH-8092, Switz.  
 SOURCE: Applied Catalysis, A: General (1996), 145(1-2), 335-349  
 CODEN: ACAGE4; ISSN: 0926-860X  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 197 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The adhesives comprise organic polyisocyanates and polyols containing 21  
 HO(R1NR2)NR3 [R1 = C2-24 linear or branched alkylene, alicyclic alkylene,  
 aralkylene, (CH2CH2O)p(CH2CH2)q; p, q > 0; R2 = C1-9 linear or branched  
 alkyl, aralkyl; R3 = R1OH; n = 2-50]. Treating 1,6-hexanediol with a  
 mixture of MeNH2 and H2 in the presence of a Cu/Ni/  
 Pd catalyst gave HO(C6H12NMe)4.1C6H12OH, 10 parts of  
 which were mixed with 90 parts MDI-ethylene glycol-polypropylene glycol  
 prepolymer and Desmodur RF (isocyanate, NCO index 120), applied onto a  
 polyurethane foam sheet, and laminated with a natural leather sheet to  
 give a laminate showing layer bonding strength 10.7 kg/in. after 1 day at  
 room temperature

ACCESSION NUMBER: 1996:593380 CAPLUS  
 DOCUMENT NUMBER: 125:224114  
 TITLE: Two-component polyurethane adhesives with high  
 initial bonding strength and their manufacture  
 INVENTOR(S): Isayama, Yasutoshi; Morii, Masayoshi; Hiraishi,  
 Tokuji; Nomura, Takayuki  
 PATENT ASSIGNEE(S): Kao Corp, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08183942	A2	19960716	JP 1994-340361	19941227
PRIORITY APPLN. INFO.:			JP 1994-340361	19941227

L38 ANSWER 198 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Recent studies dealing with the structural, electronic, chemical and  
 catalytic properties of well-defined bimetallic surfaces are reviewed.  
 LEED and STM show that two metals interacting on a surface can form  
 compds. with structures not seen in bulk alloys. Many phenomena related  
 to the kinetics of growth of metals on metals have been discovered. The  
 knowledge gathered in this area provides a solid basis for the synthesis  
 of new materials with applications in areas of catalysis,  
 electro-chemical and microelectronics. In many cases, the formation of a surface  
 bimetallic bond induces large changes in the band structure of the  
 metals.  
 For surfaces that contain transition of s,p metals, the strongest  
 metal-metal interactions occur in systems that combine a metal with a  
 valence band almost fully occupied and a metal in which the valence band  
 is almost empty. A very good correlation was found between the  
 electronic perturbations in a bimetallic system and its cohesive energy. Bimetallic  
 bonds that display a large stability usually involve a significant  
 redistribution of charge around the metal centers. The electronic  
 perturbations affect the reactivity of the bonded metals toward small  
 mols. (CO, CO2, H2, O2, S2, C2H4, CH3OH, etc.). For supported monolayers  
 of Ni, Pd, Pt and Cu a correlation was observed  
 between the shifts in surface core-level binding energies and changes in  
 the desorption temperature of CO from the metal adlayers. Examples are  
 provided which demonstrate the utility of single-crystal studies for understanding  
 the role of "ensemble" and "ligand" effects in bimetallic  
 catalysts. Over 360 refs.

ACCESSION NUMBER: 1996:556921 CAPLUS  
 DOCUMENT NUMBER: 125:257668  
 TITLE: Physical and chemical properties of bimetallic  
 surfaces  
 AUTHOR(S): Rodriguez, Jose A.  
 CORPORATE SOURCE: Dep. Chem., Brookhaven Natl. Lab., Upton, NY, 11973,  
 USA  
 SOURCE: Surface Science Reports (1996), 24(7/8), 223-287  
 CODEN: SSRDPI; ISSN: 0167-5729  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal: General Review  
 LANGUAGE: English

L38 ANSWER 199 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Dehydrogenation catalysts are prepared by a predoping iron oxide  
 materials with a dopant (containing an element selected from, Be, Mg,  
 Ca,  
 Sr, Ba, Sc, Ti, Zr, Hf, V, Ta, Mo, W, Mn, Tc, Re, Ru, Os, Co, Rh, Ir,  
 Ni, Pd, Pt, Cu, Ag, Au, Zn,  
 , Cd, Hg, Al, Ga, In, Rb, Cs, Sn, Pb, Bi, Ce, Pr, Nd, Pm, Sm,  
 Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu) and heating the blend to  
 2600° and thereafter forming a catalyst. The  
 catalysts so prepared are useful in the dehydrogenation of a composition  
 having a saturated portion. Such catalytic uses include the conversion  
 of ethylbenzene to styrene. Thus, synthetic red iron oxide was predoped  
 with ammonium dimolybdate and then mixed with Ca carbonate, Ce2(CO3)3, and K  
 carbonate and heated to 825° to give a catalyst with median pore diameter 665Å and catalyst pore volume 0.0979 cm3/g.  
 In dehydrogenation of EtPh to styrene under isothermal conditions using  
 the prepared catalyst, the temperature required for 70% conversion of  
 EtPh was 596°, and the molar selectivity to styrene was 96%.

ACCESSION NUMBER: 1996:488754 CAPLUS  
 DOCUMENT NUMBER: 125:115446  
 TITLE: Predoped iron oxide dehydrogenation catalysts  
 for styrene manufacture  
 INVENTOR(S): Milam, Stanley Nemec; Shanks, Brent Howard  
 PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij BV, Neth.  
 SOURCE: PCT Int. Appl., 29 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9618458	A1	19960620	WO 1995-EF5038	19951213
W: AU, CA, CN, JP, KR, SG				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2207564	AA	19960620	CA 1995-2207564	19951213
AU 9643462	A1	19960703	AU 1996-43462	19951213
AU 698764	B2	19981105		
EP 956157	A1	19991117	EP 1995-942181	19951213
R: DE, ES, FR, GB, IT, NL, SE				
CN 1244138	A	20000209	CN 1995-196766	19951213
CN 1099908	B	20030129		
JP 2000507148	T2	20000613	JP 1996-518287	19951213
US 5962757	A	19991005	US 1997-839841	19970417
PRIORITY APPLN. INFO.:			US 1994-355949	A 19941214
			US 1995-530505	B1 19950919
			WO 1995-EF5038	W 19951213

OTHER SOURCE(S): MARPAT 125:115446

L38 ANSWER 200 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI

AB Naphthalenedicarboxylic acids (I) (e.g., 2,6-naphthalenedicarboxylic  
 acid) and diaryldicarboxylic acids (II; A = direct bond, CO, SO2) are prepared  
 by the oxidation of dialkyl-substituted naphthalenes (III; R, R1 = Me, Et,  
 2-Fr) (e.g., 2,6-diisopropyl-naphthalene) or dialkyl-substituted diaryl compds.  
 (IV) with an O2-containing gas in an organic solvent (e.g., AcOH) in the  
 presence of a catalyst comprising Cu and Br, or a  
 catalyst comprising Cu, Br and 21 of amine  
 compd(s). (e.g., pyridine) and heavy metal(s) (e.g., V, Mn, Fe, Ni,  
 Pd, Ce). This process gives high yields of  
 naphthalenedicarboxylic acids and of diaryldicarboxylic acids with the  
 use of small amts. of catalyst.

ACCESSION NUMBER: 1996:418190 CAPLUS  
 DOCUMENT NUMBER: 125:142309  
 TITLE: Oxidation process and catalysts for the  
 preparation of naphthalenedicarboxylic acids and  
 diaryldicarboxylic acids  
 INVENTOR(S): Saitou, Noboru; Hirota, Koichi; Hasebe, Ren; Okuda,  
 Norimasa; Katsumi, Ikuyo  
 PATENT ASSIGNEE(S): Nippon Shokubai Co., Ltd., Japan  
 SOURCE: U.S., 12 pp., Cont. of U.S. Ser. No. 998,745,  
 abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5523473	A	19960604	US 1995-450934	19950525
PRIORITY APPLN. INFO.:			US 1992-998745	19921230

OTHER SOURCE(S): MARPAT 125:142309

L38 ANSWER 201 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The method comprises applying a.c. potential onto the surface of  
**catalyst** elements having piezoelec. support to give a predetd.  
 resonator vibrations, and joining the lead wires to piezoelec. pellets  
 for  
 forming active **catalyst** elements and preventing lattice  
 migration of piezoelec. supports in their microstructure. The solid  
 catalysis may contain Fe, Co, **Ni**, **Pd**, **Cu**,  
**Ag**, Pt, MoO<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, and/or NiO.  
 ACCESSION NUMBER: 1996:379919 CAPLUS  
 DOCUMENT NUMBER: 125:40667  
 TITLE: Method for increasing the activity of solid  
**catalysts** used in flue gas treatment  
 INVENTOR(S): Inoue, Yasunobu  
 PATENT ASSIGNEE(S): Tokyo Electric Power Co., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08103669	A2	19960423	JP 1994-237909	19940930
JP 3162583	B2	20010508		
PRIORITY APPLN. INFO.:			JP 1994-237909	19940930

L38 ANSWER 202 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The authors have used the bond order conservation-Morse potential  
 (BOC-MP) method to analyze the chemical of S oxides on the **Cu** and **Ni** group  
 metals. Specifically, the authors have calculated the reaction  
 energetics  
 (heats of adsorption, reaction enthalpies and intrinsic activation  
 barriers) of the decomposition and oxidation of SO<sub>2</sub> at low coverages on  
 fcc (111)  
 surfaces of **Cu**, **Ag**, **Au**, **Ni**, **Pd**,  
 and Pt. The accuracy of the BOC-MP heats of adsorption was corroborated  
 by high quality ab initio calcms. of the heats of SO<sub>2</sub> adsorption on  
**Ag** and **Pd** surfaces. The authors address the following issues: (1)  
 the dissociation of SO<sub>2</sub>; (2) the stability of adsorbed SO and its  
 likelihood  
 of being a product of SO<sub>2</sub> decomposition; (3) the oxidation of SO<sub>2</sub>; (4)  
 the nature  
 of adsorbed SO<sub>3</sub> and SO<sub>4</sub>. The major model projections (obtained for low  
 coverages and without considering diffusional effects) are: (1) the  
 dissociation of SO<sub>2</sub> → SO + O is unfavorable on all the metals  
 considered, but the dissociation of SO<sub>2</sub>+S+O+O (showing distinct  
 periodic trends) is feasible on **Cu** and particularly on **Ni**. In  
 the presence of CO, the dissociation SO<sub>2</sub> + CO → S + O + CO<sub>2</sub> may occur  
 on all 6 of these metals. (2) On the Pt, **Pd**, **Ni** and  
**Cu** surfaces, SO is unstable. (3) The oxidation of SO<sub>2</sub> to SO<sub>3</sub> may be  
 achieved with O, O<sub>2</sub>, H<sub>2</sub>O<sub>2</sub>, and NO as O sources on **Ag**, **Au**, **Pd**,  
 and Pt surfaces. Although adsorbed SO<sub>3</sub> may be obtained readily, it may  
 be  
 impossible to desorb SO<sub>3</sub> intact at low coverages because SO<sub>3</sub> will  
 decompose  
 to SO<sub>2</sub> + O before desorption. (4) The most stable O-S species that  
 withstands elevated temps. should be dianion sulfate. The relevant  
 exptl.  
 data are discussed. Most of the model projections agree with  
 experiment, but  
 some suggest reconsideration of published exptl. data or represent  
 predictions to be verified.

ACCESSION NUMBER: 1996:362478 CAPLUS  
 DOCUMENT NUMBER: 125:124476  
 TITLE: Chemistry of sulfur oxides on transition metal  
 surfaces: a bond order conservation-Morse potential  
 modeling perspective  
 AUTHOR(S): Sellers, Harrell; Shustorovich, Evgeny  
 CORPORATE SOURCE: Department of Chemistry, South Dakota State  
 University, Brookings, SD, 57007, USA  
 SOURCE: Surface Science (1996), 356(1-3), 209-221  
 CODEN: SUSCAS; ISSN: 0039-6028  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 203 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Polluted gases are efficiently afterburned by mixing the waste gases with  
 finely divided aqueous solution of oxidants and wetting agents, e.g.,  
 peroxides  
 and/or ozone, and wetting agents. The mixture is then catalytically  
 oxidized using a solid containing Mn, Pt, Fe, **Pd**, **Ni**, and  
**Cu**.  
 ACCESSION NUMBER: 1996:311636 CAPLUS  
 DOCUMENT NUMBER: 124:324256  
 TITLE: Method, apparatus and **catalyst** for removal  
 of oxidizable pollutants from waste gases  
 INVENTOR(S): Kunze, Joachim; Plenz, Rainer; Kryk, Holger; Kerl,  
 Torsten; Kuehn, Thorsten  
 PATENT ASSIGNEE(S): Germany  
 SOURCE: Ger. Offen., 9 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19530896	A1	19960425	DE 1995-19530896	19950814
WO 9612552	A1	19960502	WO 1995-DE1504	19951019
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, MD, MR, NE, SH, TD, TG				
AU 9538005	A1	19960515	AU 1995-38005	19951019
PRIORITY APPLN. INFO.:			DE 1994-4438790	19941019
			DE 1995-19530896	19950814
			WO 1995-DE1504	19951019

L38 ANSWER 204 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB An ion exchange resin (e.g., macroporous polystyrene resin) containing  
 Pd and  
 a second metal (e.g., **Ni**, **Cu**, **Ag**, or Fe) capable of  
 inhibiting **catalyst** inactivation by S compds. is used for  
 etherification, hydrogenation, and double bond isomerization in the  
 manufacture  
 of an alkyl tertiary-alkyl ether (e.g., MTBE or tert-amyl Me ether) from  
 such as  
 an olefin-containing C<sub>4</sub>-10 hydrocarbon mixture or naphtha and an alc.  
 such as  
 MeOH.  
 ACCESSION NUMBER: 1996:245538 CAPLUS  
 DOCUMENT NUMBER: 124:265394  
 TITLE: **Catalysts** and process for preparation of  
 alkyl tertiary-alkyl ethers such as MTBE  
 INVENTOR(S): Ramirez de Aquedelo, Magdalena; Romero, Trino J.;  
 Mujica, Emilia  
 PATENT ASSIGNEE(S): Intevep S.A., Venez.  
 SOURCE: Ger. Offen., 8 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19530409	A1	19960222	DE 1995-19530409	19950818
DE 19530409	C2	19971009		
US 5523272	A	19960604	US 1994-292832	19940819
PRIORITY APPLN. INFO.:			US 1994-292832	A 19940819



L38 ANSWER 205 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The dissociative adsorption of H mol. on (100), (110), and (111) surfaces of Ni, Pd and Cu were studied by using the embedded-atom method (EAM). The EAM potentials for H-metal surfaces were obtained by fitting the adsorption energies and the adsorption bond length for single H atoms on different surfaces of Ni, Pd, and Cu. Next, the activation barriers (Ea) adsorption heat (qad) and corresponding H-metal bond length (R) for dissociation of H2 through various pathways were calculated. The potential energy contours for H2 dissociation on (110) surfaces of different metals are presented. The dissociative adsorption of a H2 mol. depends on the substrate nature, the surface orientation, and the dissociation pathways. The activation barrier for H2 dissociation on the Ni surface is very low, while it is higher for H2 dissociation on Cu. The dissociative adsorption of H2 is easier on open (110) surface than that on close-packed (111) surface. Among these dissociation pathways, it appears that the most favorable pathway for H2 is that from a bridge site to adjacent center sites.

ACCESSION NUMBER: 1996:184722 CAPLUS  
 DOCUMENT NUMBER: 124:271306  
 TITLE: H2 dissociative adsorption on the surfaces of Ni, Pd and Cu  
 AUTHOR(S): Sun, Qiang; Xie, Jian-jun; Zhang, Tao  
 CORPORATE SOURCE: Dep. Phys., Zhengzhou Univ., Zhengzhou, 450052, Peop. Rep. China  
 SOURCE: Wuli Xuebao (1995), 44(11), 1805-13  
 CODEN: WULPAR; ISSN: 1000-3290  
 PUBLISHER: Kexue  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese

L38 ANSWER 206 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Cyclic and rotating-disk voltammetry were used to study the electrochem. reduction of halothane (2-bromo-2-chloro-1,1,1-trifluoroethane) on various metal electrodes (Cu, Ag, Au, Sn, Cd, Hg, Ga, In, Tl, Sn, Sb, W, Ni, Pd and Pt) in several solvents (water, propylene carbonate, acetonitrile, methanol, acetone and THF). In agreement with previous mechanistic studies, the overall reaction was found to involve two electrons yielding 2-chloro-1,1,1-trifluoroethane and bromide as the main products. The transfer of the 1st electron probably is the rate-determining step. Irresp. of the metal, solvent or electrolyte used, no reaction intermediates were detected by fast scan cyclic voltammetry, i.e. all electrode and/or chemical reactions following this rate-determining step are too fast. The effect of the nature of the solvent is manifested mainly in the decreasing rate of the halothane transport as the solvent viscosity increases, and in the decreasing solvation of the bromide anion with the decreasing polarity of the solvent, which makes the reduction less favorable energetically. In contrast with a previous mechanistic study, a strong effect of the nature of metal on the halothane reduction was observed. First, the halothane reduction is quite inhibited when an oxide film is formed at the metal surface. Second, in the absence of the metal oxide film, the half-wave potentials of the halothane reduction on various metals can differ by several hundreds of millivolts. A simple theory of this effect was outlined, which assumes formation of an intermediate bond between the surface metal atom and the Br moiety of the halothane mol.

ACCESSION NUMBER: 1996:142797 CAPLUS  
 DOCUMENT NUMBER: 124:214400  
 TITLE: Electrocatalytic reduction of halothane  
 AUTHOR(S): Langmaier, Jan; Samec, Zdenek  
 CORPORATE SOURCE: J. Heyrovsky Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, CZ 18223, Prague, 8, Czech.  
 SOURCE: Journal of Electroanalytical Chemistry (1996), 402(1-2), 107-13  
 CODEN: JECHE9; ISSN: 0368-1874  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 207 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The process comprises removing solvents from Nb-containing material solns., preferably by spray or freeze drying, before precipitation of insol. substances; precipitating the insol. substances; and firing the precipitated substances. The materials may be Mo, V, Te, Sb, Bi, Ta, W, Ti, Al, Zr, Cr, Mn, Fe, Ru, Co, Rh, Ni, Pd, Pt, B, In, Ce, Si, P, Cu, alkali metals, and/or alkaline earth metals, and the Nb materials may be organic acid Nb salts. The materials may contain support components. The mixed oxides may be MoaVbNbxCxOn (X = Te, Sb, Bi, Ta, W, Ti, Al, Zr, Cr, Mn, Fe, Ru, Co, Rh, Ni, Pd, Pt, B, In, and/or Ce; when a is 1 then b and c are 0.01-1.0 and x is 0-1.0; n is depended on the oxidation state).

Catalysts from the mixed oxides for manufacture of nitriles from alkanes and NH3 by gas-phase oxidation are also claimed.

ACCESSION NUMBER: 1996:100978 CAPLUS  
 DOCUMENT NUMBER: 124:150037  
 TITLE: Manufacture of niobium-containing mixed oxides  
 INVENTOR(S): Ushikubo, Takashi; Inumaru, Hiroshi; Kobayakawa, Satoshi  
 PATENT ASSIGNEE(S): Mitsubishi Kagaku KK, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07315842	A2	19951205	JP 1994-112690	19940526
PRIORITY APPLN. INFO.:			JP 1994-112690	19940526

L38 ANSWER 208 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB To investigate the optimum catalytic conditions in the synthesis of oxalic acid from ethylene glycol, palladium catalyst supported on activated carbon or bimetallic catalysts such as palladium-cobalt, palladium-nickel and palladium-copper supported on activated carbon were studied. Cobalt was the only effective promoter when used along with palladium catalyst.

ACCESSION NUMBER: 1996:57873 CAPLUS  
 DOCUMENT NUMBER: 124:205524  
 TITLE: The synthesis of oxalic acid from ethylene glycol over supported Pd catalysts  
 AUTHOR(S): Lee, Kwang-Il; Kwak, Chun-Geun; Chang, Byung-Man  
 CORPORATE SOURCE: Dep. Chem., Kyonggi Univ., Suwon, 440-760, S. Korea  
 SOURCE: Kengop Hwahak (1995), 6(6), 1191-200  
 CODEN: KOHWE9; ISSN: 1225-0112  
 PUBLISHER: Korean Society of Industrial and Engineering Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Korean

L38 ANSWER 209 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The **catalysts** consist of Pd<sub>40</sub>MobNi<sub>40</sub>Al<sub>20</sub> or Pd<sub>40</sub>MobNi<sub>40</sub>Al<sub>20</sub>Y<sub>20</sub> (a = 0.01-5 in wt%; b, c, d, e, and f show each atomic ratio ; when b = 10, then c = 0.1-11, d = 30-200, e ≤ 5, and f ≤ 5; g = number of O atoms to satisfy valent of each component; X = K, Rb, Cs, and/or Ba; Y = Cr, Mn, Co, Fe, Cu, Zn, Ga, Ge, Mg, Ce, Si, Ag, Bi, La, Sr, and/or Zr) or supports coated with composite oxide **catalysts** containing Pd, Mo, Ni, and Al. The **catalysts** are especially suitable for removal of NO<sub>x</sub> in O-excess atmospheric at large temperature range.  
 ACCESSION NUMBER: 1996:56502 CAPLUS  
 DOCUMENT NUMBER: 124:125697  
 TITLE: Multicomponent composite oxide **catalysts** for exhaust gas treatment  
 INVENTOR(S): Yamamoto, Shinji  
 PATENT ASSIGNEE(S): Nissan Motor, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp. CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07289904	A2	19951107	JP 1994-92029	19940428
PRIORITY APPLN. INFO.: JP 1994-92029 19940428				

L38 ANSWER 210 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The addition of **Zn** can induce significant changes in the chemical and catalytic properties of a transition metal surface. The properties of a series of bimetallic surfaces that combine **Zn** with Rh or group 10 elements (TM = Ni, Pd, or Pt) were examined by using thermal desorption mass spectroscopy, core- and valence-level photoemission, CO chemisorption, and ab initio self-consistent-field calcs. The deposition of **Zn** on Rh (111) or polycryst. surfaces of group 10 metals leads to the formation of alloys. These surface alloys decompose at high temps. (600-800 K, ZnNi; 650-850 K, ZnRh; 750-950 K, ZnPt; 850-1000 K, ZnPd). In the alloys, the core levels and valence d band of the transition metals exhibit pos. binding energy shifts, while neg. shifts are observed for the **Zn** 2p levels and 3d band. For CO/ZnRh and CO/ZnTM surfaces, the CO adsorption bond is weaker than for CO/Rh and CO/TM surfaces (1-2 kcal/mol on ZnNi; 4-5 kcal/mol on ZnRh; 4-8 kcal/mol on ZnPt; and 12-16 kcal/mol on ZnPd). For the ZnRh and ZnTM systems, a very good correlation exists between the strength of the bimetallic bond and changes in the electronic and chemical properties of the metals. In these systems, there is an important redistribution of charge that shifts d electrons from the transition metal toward **Zn**, producing an accumulation of electrons around the bimetallic bonds. The larger this shift of d electrons, the stronger the bimetallic bond, and the bigger the changes in the band structure and chemical properties of the transition metal.  
 ACCESSION NUMBER: 1995:983123 CAPLUS  
 DOCUMENT NUMBER: 124:38448  
 TITLE: Interaction of **Zinc** with Transition-Metal Surfaces: Electronic and Chemical Perturbations Induced by Bimetallic Bonding  
 AUTHOR(S): Rodriguez, Jose A.; Kuhn, Mark  
 CORPORATE SOURCE: Department of Chemistry, Brookhaven National Laboratory, Upton, NY, 11973, USA  
 SOURCE: Journal of Physical Chemistry (1996), 100(1), 381-9 CODEN: JPCHAX; ISSN: 0022-3654  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 211 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In this review with 34 refs., syntheses and structural systematics of vertex-sharing polyicosahedral clusters containing Group 11 (Au, Ag, Cu) and Group 10 (Pt, Pd, Ni) metals are discussed. This particular series of clusters follows a well-defined growth pathway in which the basic building block is the 13-atom centered icosahedron. The design rule is vertex sharing and the cluster grows by successive addns. of icosahedral units via sharing of atoms. This cluster-of-clusters growth mechanism from a single icosahedron (13 atoms) to an icosahedron of icosahedra (127 atoms) parallels the atom-by-atom growth from a single atom to a 13-atom icosahedron and hence may be considered as a manifestation of the spontaneous self-organization and self-similarity aggregation process in the early stages of particle growth. This tendency to form polyicosahedral clusters may be termed polyicosahedrality. Recent developments in synthetic strategies and stereochem. principles of bi- and trimetallic vertex-sharing polyicosahedral clusters are highlighted with emphasis on (1) endo icosahedral chemical by incorporating Group 10 metals in the centers of the icosahedra, (2) exo icosahedral chemical by capping the icosahedral faces with metal atoms or by capturing small moles. in the cluster cavities, and (3) framework icosahedral chemical by changing the metal combination (Group 11 metals) of the cluster architecture. Specifically, a new synthetic strategy based on performed clusters, site preference rules, new concepts such as rotamerism and roulettamerism, and a new intracavity chemical on a cluster surface resembling Venus flytrap are discussed. It is hoped that basic understanding of the stereochem. and bonding principles governing alloy formation in multimetallic clusters will lead to better electronic and stereochem. controls of their structures and reactivities and, ultimately, give rise to better design and manufacture or fabrication of structurally well-defined and functionally optimized nanoarchitecture, multimetallic **catalysts**, etc.  
 ACCESSION NUMBER: 1995:930751 CAPLUS  
 DOCUMENT NUMBER: 124:20200  
 TITLE: Polyicosahedrality: icosahedron to icosahedron of icosahedra growth pathway for bimetallic (Au-Ag) and trimetallic (Au-Ag-M; M = Pt, Pd, Ni) supraclusters; synthetic strategies, site preference, and stereochemical principles  
 AUTHOR(S): Teo, Boon K.; Zhang, Hong  
 CORPORATE SOURCE: Department of Chemistry, University of Illinois at Chicago, Chicago, IL, 60607, USA  
 SOURCE: Coordination Chemistry Reviews (1995), 143, 611-36 CODEN: CCHRAM; ISSN: 0010-8545  
 PUBLISHER: Elsevier Sequoia  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

L38 ANSWER 212 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Pd/ZnO and Pt/ZnO exhibited high catalytic performance for the dehydrogenation of methanol to Me formate upon the formation of PdZn and PtZn alloys.  
 ACCESSION NUMBER: 1995:870946 CAPLUS  
 DOCUMENT NUMBER: 124:86178  
 TITLE: Dehydrogenation of methanol to methyl formate over supported Ni, Pd and Pt **catalysts**. Anomalous catalytic functions of PdZn and PtZn alloys  
 AUTHOR(S): Iwasa, N.; Akazawa, T.; Ohya, S.; Fujikawa, K.; Takezawa, N.  
 CORPORATE SOURCE: Div. Materials Sci. Eng., Hokkaido Univ., Sapporo, 060, Japan  
 SOURCE: Reaction Kinetics and Catalysis Letters (1995), 55(2), 245-50 CODEN: RKCLAU; ISSN: 0304-4122  
 PUBLISHER: Akademiai Kiado  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 213 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In the active matrix liquid-crystal display device comprising TFTs on an insulating surface of a substrate, a part of the TFT is made from a crystalline Si film containing a **catalyst** element to promote crystallization of the film, in which concns. of the element are selectively differed from a peripheral region to a pixel region. The **catalyst** element may be selected from **Ni, Pd, Pt, Cu, Ag**, Au, In, Sn, Pb, P, As, and Sb.  
 ACCESSION NUMBER: 1995:858655 CAPLUS  
 DOCUMENT NUMBER: 123:242185  
 TITLE: Active matrix liquid-crystal display device and manufacture thereof  
 INVENTOR(S): Myanaga, Shoji; Ootani, Hisashi; Takemura, Yasuhiko  
 PATENT ASSIGNEE(S): Handotai Energy Kenkyusho, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07183537	A2	19950721	JP 1993-346714	19931222
JP 3025814	B2	20000327		
JP 07183535	A2	19950721	JP 1993-346710	19931222
JP 2762218	B2	19980604		
JP 07183536	A2	19950721	JP 1993-346712	19931222
JP 2762219	B2	19980604		
JP 11168219	A2	19990622	JP 1998-248799	19931222
JP 3435561	B2	20030811		
JP 11168220	A2	19990622	JP 1998-248804	19931222
JP 3242884	B2	20011225		
JP 2002158234	A2	20020531	JP 2001-280261	19931222
JP 11154753	A2	19990608	JP 1998-252069	19980907
JP 3105492	B2	20001030		
US 2002130323	A1	20020919		
US 6624445	B2	20030923	US 2002-135773	20020501
PRIORITY APPLN. INFO.:			JP 1993-346710	A 19931222
			JP 1993-346712	A 19931222
			JP 1993-346714	A3 19931222
			JP 1998-248804	A3 19931222
			US 1994-356584	B1 19941215
			US 1997-976918	A3 19971124

L38 ANSWER 215 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The electrochem. reduction of CO<sub>2</sub> at a pressure of 30 atm on various electrodes at large current densities (163-700 mA cm<sup>-2</sup>) in an aqueous solution and the cathodic voltammograms obtained were studied. The electrocatalytic activities of various electrodes for the electrochem. reduction of CO<sub>2</sub> under high pressure conditions were clarified. The main products on **Ag, Au, Sn, Pb** and **In** electrodes were formic acid and/or CO, as at CO<sub>2</sub> pressures of 1 atmospheric. The total c.d. on the cathodic voltammograms of those metal electrodes increased with increasing CO<sub>2</sub> pressure. On Group 8-10 metals, such as Fe, Co, Rh, **Ni, Pd** and **Pt**, the main reduction products were formic acid and/or CO under high pressure, whereas under 1 atm CO<sub>2</sub> hydrogen was formed by reduction of water. In these cases, the total c.d. changed only slightly with increasing CO<sub>2</sub> pressure. By comparing the electrocatalytic activities of various electrodes at a CO<sub>2</sub> pressure of 30 atm with those at a CO<sub>2</sub> pressure of 1 atm, the electrodes were classified into four groups. On Rh, **Ag** and **Pd** electrodes, the maximum partial current densities for CO<sub>2</sub> reduction under 30 atm were 237 mA cm<sup>-2</sup>, 383 mA cm<sup>-2</sup> and 397 mA cm<sup>-2</sup> resp. The reduction of CO<sub>2</sub> at large current densities could be accomplished at high pressures.  
 ACCESSION NUMBER: 1995:655770 CAPLUS  
 DOCUMENT NUMBER: 123:95952  
 TITLE: Electrochemical reduction of carbon dioxide under high pressure on various electrodes in an aqueous electrolyte  
 AUTHOR(S): Hara, Kohjiro; Kudo, Akihiko; Sakata, Tadayoshi  
 CORPORATE SOURCE: Department of Electronic Chemistry, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama, 226, Japan  
 SOURCE: Journal of Electroanalytical Chemistry (1995), 391(1-2), 141-7  
 CODEN: JECHES; ISSN: 0368-1874  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 214 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB C4-20 alkenes (e.g., n-pentenes) are skeletally isomerized in a two-step process by first contacting the isomerization **catalyst** (containing metals chosen from **Pt, Pd, Ni, Cu, Mn**, etc.) with an aqueous organic polysiloxane emulsion, and, in the second step, contacting the alkenes (optionally in a mixture with water; where the water/alkene molar ratio is 0-10) with the treated **catalyst** at 300-570°/1-10 bar and space velocity 0.1-10 h<sup>-1</sup>.  
 ACCESSION NUMBER: 1995:708785 CAPLUS  
 DOCUMENT NUMBER: 123:86594  
 TITLE: Two-step process and alumina-based **catalysts** for the skeletal isomerization of C4-20 alkenes  
 INVENTOR(S): Travers, Christine; Burzynski, Jean-pierre  
 PATENT ASSIGNEE(S): Institut Francais du Petrole, Fr.  
 SOURCE: Eur. Pat. Appl., 10 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 659719	A1	19950628	EP 1994-402765	19941202
EP 659719	B1	19980520		
R: BE, DE, ES, FR, GB, NL				
FR 2714051	A1	19950623	FR 1993-15502	19931222
FR 2714051	B1	19960202		
ES 2119114	T3	19981001	ES 1994-402765	19941202
IN 187785	A	20020622	IN 1994-MA1207	19941205
US 5545793	A	19960813	US 1994-360610	19941221
CA 2138881	AA	19950623	CA 1994-2138881	19941222
JP 07233377	A2	19950905	JP 1994-318973	19941222
CN 1109039	A	19950927	CN 1994-113207	19941222
CN 1051985	B	20000503		
PRIORITY APPLN. INFO.:			FR 1993-15502	A 19931222

L38 ANSWER 216 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A symposium. The arylation of different hard heteroat. nucleophiles with aryl bromides has been investigated using **Pd, Ni** or **Cu-catalysts**. The reaction of arylbromides with amines affords mostly the corresponding aromatic hydrocarbon by using palladium **catalysts**, but the expected substituted anilines are formed in good yields by using a nickel (II) **catalyst**. The reaction of alcs. with arylbromides and nickel or **copper catalysts**, in presence of base, has been investigated comparatively in regard to the influence of the metals, of the ligands, of the base, of the primary or secondary alcs. and of the substituents on the aryl bromide. The best conditions, with bipyNiBr<sub>2</sub> in presence of K<sub>2</sub>CO<sub>3</sub> at 125°C, afford quant. yields in the Ph alkyl ethers from the primary alcs. The hydrolysis of aryl halides into phenolate, actually the arylation of hydroxide anion, has also been investigated by using **copper catalysts**. As for the arylation of alcs., the bromobenzene is much more reactive than the chlorobenzene. The reaction needs an induction period which depends strongly on the temperature and less significantly on the **copper catalyst**. From the results obtained in presence of different radical scavengers or reducers, a new mechanism has been proposed for the hydrolysis of the arylhalides, including a preliminary redox process leading to a **copper** (II) species and then a radical free catalytic cycle, corresponding to oxidative addition and reductive elimination processes. Last, the nickel catalyzed halogen exchange for haloarenes, actually the arylation of halide anions, has been investigated. The equilibrated exchange between the Ph bromide (60 %) and the Ph iodide (40 %) allows with some.  
 ACCESSION NUMBER: 1995:623635 CAPLUS  
 DOCUMENT NUMBER: 123:196354  
 TITLE: Arylation of hard heteroatomic nucleophiles using bromoarenes substrates and **Cu, Ni, Pd catalysts**  
 AUTHOR(S): Cristau, Henri-Jean; Desmurs, Jean-Roger  
 CORPORATE SOURCE: Unite de Recherche Associee au CNRS N° 458, Laboratoire de Chimie Organique ENSCM, Montpellier, F 34053, Fr.  
 SOURCE: Industrial Chemistry Library (1995), 7, 240-63  
 CODEN: ICHLE6; ISSN: 0926-9614  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 217 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The surface chemical (induced by thermal and non-thermal methods) of SO<sub>2</sub> on metal substrates is reviewed. The substrate temperature during dosing is important; regardless of metal, adsorption is dissociative at 300 K and mol. at 100 K. On **Mn**, **Pd**, and **Pt**, mol. adsorption occurs through the S and 1 O atom, and the mol. plane is perpendicular to the surface. However, on **Ag** and **Cu**, adsorption occurs only through the S with the mol. plane perpendicular to the surface. The differences can be attributed to the structure of the metal MOs and their interactions with the SO<sub>2</sub> orbitals. On **Pt**, **Fe**, and **Pd**, addnl. reactions are observed between SO<sub>2</sub> and its dissociation products. 59 Refs.

ACCESSION NUMBER: 1995:546144 CAPLUS  
 DOCUMENT NUMBER: 123:153452  
 TITLE: SO<sub>2</sub> surface chemistry on metal substrates  
 AUTHOR(S): Sun, Y.-M.; Sloan, D.; White, J. M.  
 CORPORATE SOURCE: Department Chemistry Biochemistry Center Materials Chemistry, University Texas Austin, Austin, TX, 78712, USA  
 SOURCE: Journal of the Chinese Chemical Society (Taipei) (1995), 42(2), 433-48  
 CODEN: JCC2AC; ISSN: 0009-4536  
 PUBLISHER: Chinese Chemical Society  
 DOCUMENT TYPE: Journal: General Review  
 LANGUAGE: English

L38 ANSWER 218 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The cell comprises successively laminated (A) a transparent substrate coated inside with a transparent electrode, (B) an electrolyte which is transparent in visible light region and oxidizing or reducing by photoactivation, and (C) another substrate successively coated inside with a catalyst layer, a vacuum-deposited semiconductor showing photointercalation effect, and an electrode. The catalyst layer may comprise (X) (laminated) In, Ir, Rh, Ru, Os, Co, Au, **Ag**, **Cu**, or their alloy, (Y) (laminated) MoO<sub>3</sub>, TiO<sub>2</sub>, Cr<sub>2</sub>O<sub>3</sub>, V<sub>2</sub>O<sub>5</sub>, ZnO, RuO<sub>2</sub>, or In<sub>2</sub>O<sub>3</sub>, or (Z) (laminated) **Pt**, **Pd**, **Ni**, or their alloy. The cell showed improved response time.

ACCESSION NUMBER: 1995:541620 CAPLUS  
 DOCUMENT NUMBER: 122:303134  
 TITLE: Photointercalation (PI) cell having catalyst layer  
 INVENTOR(S): Ebisawa, Takashi; Fuda, Koreyoshi  
 PATENT ASSIGNEE(S): Japan Steel Works Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp. CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07056195	A2	19950303	JP 1993-200773	19930812
PRIORITY APPLN. INFO.:			JP 1993-200773	19930812

L38 ANSWER 219 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The adsorbents contain supports from activated C, zeolites, bentonite, pottery stone, and/or kieselguhr loaded with metals or metal oxides of **Cu**, **Fe**, **Mn**, **Cr**, **V**, **Co**, **En**, **Ni**, **Pd**, and/or **Pt** and carbonates and/or bicarbonates of alkali metals. The method comprises introducing gases containing NO<sub>x</sub> into the adsorbent to adsorb and to fix NO<sub>x</sub>. The method is especially suitable for removing NO at a low temperature and with a low concentration

ACCESSION NUMBER: 1995:476043 CAPLUS  
 DOCUMENT NUMBER: 122:297800  
 TITLE: Adsorbents for removal of nitrogen oxides from waste gases  
 INVENTOR(S): Inoue, Tomoyo; Mishima, Koji; Inoue, Zensuke  
 PATENT ASSIGNEE(S): Takuma Sogo Kenkyusho Kk, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp. CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07000743	A2	19950106	JP 1993-138732	19930610
PRIORITY APPLN. INFO.:			JP 1993-138732	19930610

L38 ANSWER 220 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title aqueous solns. contain 0.0001-0.5 mol/L Pd compds., and 0.1-10 mol/L of 21 compds. selected from alkali metal halides, alkali metal sulfates, alkaline earth metal halides, alkaline earth metal sulfates, ammonium halides, and ammonium sulfates. The catalyst solns. homogeneously activate the Co-base materials for coating such as **Ni**, **Pd**, and **Pd-Ni** alloys, and when used for coating of elec. conductors in elec. circuits, the solns. inhibit forming bridges between the conductors.

ACCESSION NUMBER: 1995:436028 CAPLUS  
 DOCUMENT NUMBER: 122:194517  
 TITLE: Catalyst solutions for copper-base material-selective electroless coating  
 INVENTOR(S): Haga, Masaki; Uchida, Mamoru; Okada, Takashi; Uchida, Hiroko  
 PATENT ASSIGNEE(S): Ishihara Chemical Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp. CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07011448	A2	19950113	JP 1993-158450	19930629
PRIORITY APPLN. INFO.:			JP 1993-158450	19930629

L38 ANSWER 221 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB To remove H from a gas mixture containing H, O and steam (e.g. from an explosive gas mixture formed in a nuclear reactor accident), a catalytic converter (especially Cu 1, Ni 4, Pd 95 wt% alloy) for the oxidation of the H at elevated temps. is described. The catalytic converter is kept at a temperature below the deflagration temperature of the mixture by the removal of heat.

ACCESSION NUMBER: 1995:374929 CAPLUS  
 DOCUMENT NUMBER: 122:145168  
 TITLE: Catalytic converter for the removal of hydrogen from an atmosphere containing hydrogen, air and steam  
 INVENTOR(S): Chakraborty, Aniya Kumar; Konrad, Ralf Di  
 PATENT ASSIGNEE(S): Konrad, Irene, Germany; Konrad, Tatjana; Forschungszentrum Juelich G.m.b.H.; Gesellschaft fuer Anlagen- und Reaktorsicherheit  
 SOURCE: PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9500957	A1	19950105	WO 1994-DE673	19940616
W: CA, JP, RU, UA, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE 4319973	A1	19950216	DE 1993-4319973	19930617
DE 1993-4319973			DE 1993-4319973	19930617

PRIORITY APPLN. INFO.:

L38 ANSWER 222 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 30 refs.; model oxide-supported metal cluster catalysts have been prepared by evaporating the corresponding metal (e.g., Cu, Pd, Ni) onto a oxide thin film (approx.100 Å), which in turn is supported on a refractory metal (Mo, W, Ta) surface. The deposited metal films, upon annealing, form small metallic clusters on the oxide surface whose size are dependent upon the initial metal film thickness. The surface structures and cluster morphologies have been characterized using scanning probe microscopies, temperature-programed desorption, X-ray, and UV photoemission; and high-resolution electron energy loss spectroscopy/IR reflection-absorption spectroscopy of adsorbed carbon monoxide. The catalytic properties of these clusters have also been investigated with respect to several reactions including CO/O<sub>2</sub> and CO/NO. The chemical and electronic properties of the metal clusters with respect to size are compared to the analogous properties of extended single crystal surfaces.

ACCESSION NUMBER: 1995:372383 CAPLUS  
 DOCUMENT NUMBER: 122:143705  
 TITLE: Catalysis by metals: from extended single crystals to small clusters  
 AUTHOR(S): Goodman, D. W.  
 CORPORATE SOURCE: Dep. Chem., Texas A and M Univ., College Station, TX, 77843, USA  
 SOURCE: Surface Review and Letters (1994), 1(4), 449-55  
 CODEN: SRLEFH; ISSN: 0218-625X  
 PUBLISHER: World Scientific  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

L38 ANSWER 223 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process, for the preparation of a catalyst composite material useful for the dewaxing of petroleum fractions contains a metallosilicate having a composition in terms of mole ratio of oxides formula: O-O.4 Na<sub>2</sub>O: M<sub>2</sub>O<sub>3</sub> : 30-300 SiO<sub>2</sub>: 0-10 H<sub>2</sub>O where M can be iron, lanthanum, aluminum, boron or mixts. thereof and which may contain in addition one or two metals from the group platinum, palladium, nickel, zinc or mixts. thereof, which comprises reacting an aqueous salt solution of the metal represented by M, silica and alkali metals and sulfuric acid with a tetraalkyl ammonium salt of formula R<sub>1</sub>R<sub>2</sub>Y<sub>2</sub>N<sup>+</sup> + Z<sup>-</sup> to form a gel, wherein R<sub>1</sub> and R<sub>2</sub> are alkyl groups containing 2-4 carbon atoms, R<sub>1</sub> may or may not be the same as R<sub>2</sub>, the values of x and y vary between 1 and 3 and may or may not be the same but the sum of the values of x and y equals 4 and Z is chloride or bromide ions, heating the resulting gel at 100° to 200° for 5 to 500 h in an autoclave, filtering, drying and calcining and mixing the resultant solid material with aluminum oxide extruding the mixture into extrudates and incorporating therein one or two metals from the group platinum, zinc and nickel by treating with a salt of zinc, platinum, nickel, or palladium by ion exchange method or by impregnation. The salt of formula R<sub>1</sub>xR<sub>2</sub>Y<sub>2</sub>N<sup>+</sup> + Z<sup>-</sup> used is triethyl-n Bu ammonium bromide or chloride.

ACCESSION NUMBER: 1995:275092 CAPLUS  
 DOCUMENT NUMBER: 122:34964  
 TITLE: Process for the preparation of a catalyst composite material  
 INVENTOR(S): Sivasanker, Subramanian; Rathnasamy, Paul  
 PATENT ASSIGNEE(S): Council of Scientific and Industrial Research, India  
 SOURCE: Indian, 26 pp.  
 CODEN: INXXAP  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
IN 171362	A	19920926	IN 1987-DE316	19870413
IN 1987-DE316			IN 1987-DE316	19870413

PRIORITY APPLN. INFO.:

L38 ANSWER 224 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The changes in structure and composition occurring in the phases formed on pyrolysis of the acid-treated rice husk at 1300°-1500°C in a N<sub>2</sub> atmospheric were studied. The SiC and Si<sub>2</sub>N<sub>2</sub>O formed have been identified using XRD. Effects of catalysts (Cd, Ni, Pd, Co, Zr, Mo and V) on the phases at 1500°C also were established from XRD.

ACCESSION NUMBER: 1995:204503 CAPLUS  
 DOCUMENT NUMBER: 122:15363  
 TITLE: Formation of SiC and Si<sub>2</sub>N<sub>2</sub>O from acid-treated rice husk with catalysts  
 AUTHOR(S): Patel, M.; Prasanna, P.  
 CORPORATE SOURCE: Pulp and Paper Res. Inst., Jaykaypur, 768 017, India  
 SOURCE: Transactions of the Indian Ceramic Society (1993), 52(5), 172-5  
 CODEN: TICSAP; ISSN: 0371-750X  
 PUBLISHER: Indian Ceramic Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 225 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 25 refs. The catalytic activity and selectivity of the gas-exposed electrode surface of metal electrodes in solid electrolyte cells is altered dramatically and reversibly upon polarizing the metal-solid electrolyte interface. The induced steady-state change in catalytic rate can be up to 9000% higher than the normal (open-circuit) catalytic rate and up to 3 + 105 higher than the steady-state rate of ion supply. This new effect of nonfaradaic electrochem. modification of catalytic activity (NEMCA) has been already demonstrated for >30 catalytic reactions on Pt, Pd, Ni, Rh, Ag and Au surfaces using O<sub>2</sub>, F<sub>2</sub>, Na<sup>+</sup> and H<sup>+</sup> conducting solid electrolytes. There is also a recent demonstration for an aqueous electrolyte system.

In this paper the common features of previous NEMCA studies are summarized and the origin of the effect is discussed in light of recent work function and XPS investigations.

ACCESSION NUMBER: 1995:198296 CAPLUS  
 DOCUMENT NUMBER: 122:91335  
 TITLE: Nonfaradaic electrochemical modification of catalytic activity  
 AUTHOR(S): Vayenas, C.G.; Bebelis, S.; Yentekakis, I.V.; Neophytides, S.; Jiang, Y.  
 CORPORATE SOURCE: Institute of Chemical Engineering and High Temperature  
 Chemical Processes, University of Patras, Patras, GR-26500, Greece  
 SOURCE: Proceedings - Electrochemical Society (1994), 94-12(Ionic and Mixed Conducting Ceramics), 230-7  
 CODEN: PESODO; ISSN: 0161-6374  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

L38 ANSWER 226 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Square planar ferrocenylethynyl transition metal complexes M[C<sub>6</sub>H<sub>4</sub>(pibond.CFc)2(PR3)2 (M = Pt, Pd, Ni; R = ferrocenyl) were prepared by the reaction of MCl2(PR3)2 with ethynylferrocene in the presence of a CuI catalyst in diethylamine, and characterized by spectral analyses. An interaction between transition metals and an iron atom was studied by using electronic spectroscopy.

ACCESSION NUMBER: 1995:111127 CAPLUS  
 DOCUMENT NUMBER: 122:133369  
 TITLE: Syntheses and properties of ferrocenylethynyl transition metal complexes of platinum, palladium, and nickel  
 AUTHOR(S): Onitsuka, Kiyotaka; Tao, Xin-Qung; Sonogashira, Kenkichi  
 CORPORATE SOURCE: Department of Applied Chemistry, Osaka City University, Osaka, 558, Japan  
 SOURCE: Bulletin of the Chemical Society of Japan (1994), 67(9), 2611-13  
 CODEN: BCSJAB; ISSN: 0009-2673  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 122:133369

L38 ANSWER 227 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The effects of metal exchange between zeolites and alkali metals (Li, Na, K; zeolite Y, ZSM-5, T), alkaline earths (Mg, Ca, Sr, Ba; ZSM-5), transition metals (La, Ce, Cr, Mn, Fe, Co, Ni, Pd, Cu, Zn; ZSM-5) and Al (ZSM-5) on the conversion of EtOH were studied. Activities of the catalysts and selectivities for C<sub>2</sub>H<sub>4</sub>, C<sub>3</sub>H<sub>6</sub>, olefins, paraffins, and arenes strongly depended on the cation chosen. Only C<sub>2</sub>H<sub>4</sub> was formed by alkali-exchanged zeolites, the most active being LiY. This could be confirmed by a long-term ageing test with LiY pellets under semi-industrial conditions. The exchange of ZSM-5 with alkaline earths or transition metals permitted the formation of a wide variety of products, ranging from high C<sub>2</sub>H<sub>4</sub> to high aromatic yields. A correlation between certain product selectivities and electronegativity was only possible in a rough approximation

ACCESSION NUMBER: 1994:658396 CAPLUS  
 DOCUMENT NUMBER: 121:258396  
 TITLE: Conversion of ethanol over metal-exchanged zeolites  
 AUTHOR(S): Schulz, Jurgen; Bandermann, Friedhelm  
 CORPORATE SOURCE: Ins. Tech. Chem., Univ. GH Essen, Essen, D-45141, Germany  
 SOURCE: Chemical Engineering & Technology (1993), 16(5), 332-7  
 CODEN: CETEER; ISSN: 0930-7516  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 228 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Oligomerization of lower hydrocarbons containing methane or ethylene as major components comprises contacting the hydrocarbons with ZSM 5-type catalyst and having the general formula aMO<sub>2</sub>/n.Al<sub>2</sub>O<sub>3</sub>.bSiO<sub>2</sub> (M = alkali or alkaline earth metals, n = metal valence, a = 0-6 and b = 350-4000) or zeolites having the M exchanged with 21 of metals selected from Mg, Ca, Sr, Cu, P, Ga, Zn, Cr, Fe, Co, Ni, Pd, Ru, Rh and Pt, under the reaction conditions of ambient pressure to 30 kg/cm<sup>2</sup>.G, 230-550°, and WHSV 0.5-5.0 h<sup>-1</sup>, to give C<sub>2</sub>4 or C<sub>2</sub>5 hydrocarbons rich in isoparaffins.

ACCESSION NUMBER: 1994:634399 CAPLUS  
 DOCUMENT NUMBER: 121:234399  
 TITLE: Oligomerization of lower hydrocarbons  
 INVENTOR(S): Kitada, Shunji; Saito, Kinjiro; Ito, Junichi  
 PATENT ASSIGNEE(S): Cosmo Sogo Kenkyusho Kk, Japan; Sekyu Kodan; Sekyu Shigen Kaihatsu Kk  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06157359	A2	19940603	JP 1992-336664	19921124
PRIORITY APPLN. INFO.:			JP 1992-336664	19921124

L38 ANSWER 229 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Alkylamines, particularly Me<sub>3</sub>CNH<sub>2</sub>, are prepared in high yield by reacting NH<sub>3</sub> or a primary amine and a monounsaturated C<sub>2</sub>-10 olefin (e.g., isobutylene) in the presence of a beta-zeolite or a (multi)metal-modified (e.g., Fe, Cr, Mn, Ni, Pd, Pt, Cu) beta-zeolite catalyst.

ACCESSION NUMBER: 1994:604828 CAPLUS  
 DOCUMENT NUMBER: 121:204828  
 TITLE: Tert-butylamine preparation by the addition of ammonia to isobutylene over beta-zeolite catalysts

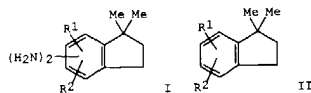
INVENTOR(S): Knifton, John F.; Dai, Pei Shing E.; Benac, Brian L.  
 PATENT ASSIGNEE(S): Texaco Chemical Co., USA  
 SOURCE: Can. Pat. Appl., 41 pp.  
 CODEN: CPXKEB

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2052964	AA	19940604	CA 1993-2092964	19930330
PRIORITY APPLN. INFO.:			US 1992-985057	19921203

OTHER SOURCE(S): CASREACT 121:204828

L38 ANSWER 230 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
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AB The title compds. (I; R<sub>1</sub>, R<sub>2</sub> = H, C<sub>1</sub>-4 alkyl) are prepared by dinitriating a dimethylindane II and hydrogenating the intermediate dinitroindane in the presence of a catalyst (e.g., Ni, Pd, Pt, Rh, etc.).

ACCESSION NUMBER: 1994:533726 CAPLUS  
 DOCUMENT NUMBER: 121:133726  
 TITLE: Nitration-reduction process for the preparation of diaminoindanes

INVENTOR(S): Yamaguchi, Keizaburo; Ooe, Masayuki; Yamaguchi, Akihiro  
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan  
 SOURCE: Can., 31 pp.  
 CODEN: CAXXA4

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 1323633	A1	19931026	CA 1989-608232	19890814
PRIORITY APPLN. INFO.:			CA 1989-608232	19890814

OTHER SOURCE(S): MARPAT 121:133726

L38 ANSWER 231 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title foams are prepared by reacting isocyanates with ≥1 tertiary amino alc. HO[R<sub>1</sub>N(R<sub>2</sub>)]nR<sub>1</sub>OH [R<sub>1</sub> = C<sub>2</sub>-24 alkylene, cyclo(alkyl)alkylene, alylene, arylalkylene, (CH<sub>2</sub>CH<sub>2</sub>O)<sub>p</sub>(CH<sub>2</sub>CH<sub>2</sub>)<sub>q</sub>; R<sub>2</sub> = C<sub>1</sub>-9 alkyl; p ≥ 0; q > 0; n = 2-50] in the presence of blowing agents selected from HCCLF<sub>2</sub>, HCF<sub>2</sub>CCl<sub>3</sub>, ClCH<sub>2</sub>CCl<sub>3</sub>, HCF<sub>2</sub>CF<sub>3</sub>, and MeCHF<sub>2</sub>. Heating 600 g 1,6-hexanediol to 200° in the presence of H and a Cu-Ni-Pd catalyst, adding 1 kg Me<sub>2</sub>N(CH<sub>2</sub>)<sub>3</sub>NH<sub>2</sub>, and heating 5 h gave a viscous liquid (OH number 162) which (10 parts) was reacted with TR 50BX (polyisocyanate) and a polyol in the presence of water and R 22 to give a foam having d. 22.8 kg/m<sup>3</sup> and good processability.

ACCESSION NUMBER: 1994:410971 CAPLUS  
 DOCUMENT NUMBER: 121:10971  
 TITLE: Manufacture of polyurethane foams with tertiary amino alcohols

INVENTOR(S): Hsrada, Shoichiro; Fukushima, Tetsuro; Kitagawa, Hiroshi; Morii, Masayoshi; Isayama, Yasutoshi  
 PATENT ASSIGNEE(S): Kao Corp, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06025371	A2	19940201	JP 1992-159390	19920618
JP 2702851	B2	19980126	JP 1992-159390	19920618

PRIORITY APPLN. INFO.:

L38 ANSWER 232 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title catalysts contain ≥1 active metals of Group IB and/or VIII on porous supports made from crystalline aluminosilicates containing alkaline earth metals such as Ba, Ca, Sr and Mg. The active metals include Cu, Ag, Pt, Co, Ni, Pd, and/or their oxides. Thus, a boiler flue gas containing 1000 ppm NO<sub>x</sub> was treated by passage through a tubular reactor having a fixed bed of PdO/Al<sub>2</sub>O<sub>3</sub> catalysts for NO<sub>x</sub> removal.

ACCESSION NUMBER: 1994:330182 CAPLUS  
 DOCUMENT NUMBER: 120:330182  
 TITLE: Catalysts for boiler flue gas treatment

INVENTOR(S): Inoue, Shunji; Kasahara, Senji; Sekizawa, Kazuhiko  
 PATENT ASSIGNEE(S): Tosoh Corp, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06063412	A2	19940308	JP 1991-348425	19911205
JP 3286996	B2	20020527	JP 1991-348425	19911205

PRIORITY APPLN. INFO.:

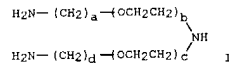
of

ACCESSION NUMBER:

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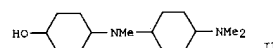
L38 ANSWER 237 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Selective hydrogenation of diolefins and acetylenes in olefinic petroleum fractions is carried out in H at <200° and 20-300 bars in the presence of a catalyst consisting of 0.1-10 weight% of a Group VIII metal (chosen from Ni, Pd, Pt, Rh, and Ru) and 0.01-10 weight% of a Group IIIA metal (chosen from Ga and In). The catalysts are supported on SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>, an aluminate, or an aluminate salt of an alkali metal, alkaline earth metal, Zn, or Cd. An olefinic C3-fraction of cracking offgases (containing propane 3.59, propylene 92.14, propyne 1.78, and propadiene 1.65 weight%) was selectively hydrogenated at 50° and 24 bars [at 2:1 H-(propyne + propadiene) ratio] over an Al<sub>2</sub>O<sub>3</sub>-supported 0.3:0.24 weight% Pd-Ga catalyst, resulting in removal of propyne and a 0.0060 weight% concentration of propadiene in the product.  
 ACCESSION NUMBER: 1994:58400 CAPLUS  
 DOCUMENT NUMBER: 120:58400  
 TITLE: Selective hydrogenation of diolefins and acetylenes in olefinic petroleum fractions  
 INVENTOR(S): Sarrazin, Patrick; Boitiaux, Jean Paul  
 PATENT ASSIGNEE(S): Institut Français du Pétrole, Fr.  
 SOURCE: Eur. Pat. Appl., 8 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 564328	A1	19931006	EP 1993-400773	19930324
EP 564328	B1	19970604		
R: BE, DE, ES, GB, IT, NL, PT				
FR 2689517	A1	19931008	FR 1992-4150	19920402
FR 2689517	B1	19950728		
ES 2105150	T3	19971016	ES 1993-400773	19930324
IN 181363	A	19980530	IN 1993-MA217	19930329
CA 2093273	AA	19931003	CA 1993-2093273	19930402
JP 06025020	A2	19940201	JP 1993-76882	19930402
CN 1081664	A	19940209	CN 1993-105443	19930402
CN 1039988	B	19980930		
US 5364998	A	19941115	US 1993-42178	19930402
PRIORITY APPLN. INFO.:			FR 1992-4150	A 19920402

L38 ANSWER 238 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB A review with 31 refs., with an elaboration made of data published in the author's previous contributions on (i) the adsorption of benzene and cyclohexane on Fe, Co, Ni, Cu, Pt and their oxides; (ii) on the mechanism of cyclohexane dehydrogenation and hexane dehydrocyclization on MVIII metals and Cr<sub>2</sub>O<sub>3</sub>, and (iii) on the interaction of ethane with Ni, Pd, and Cr<sub>2</sub>O<sub>3</sub>. It follows from this systematic comparison that there are no fundamental differences between catalytic behavior of metals and oxides in these cases. This is explained by interaction of the initial catalysts with the participants of the reactions producing the real active sites. The term metal and metal oxide indicates the initial state of the surface which differs substantially from the real catalytic one.  
 ACCESSION NUMBER: 1994:39242 CAPLUS  
 DOCUMENT NUMBER: 120:39242  
 TITLE: Comparison of metals and metal-oxides from the viewpoint of their effect in effect in some reactions of hydrocarbons  
 AUTHOR(S): Tetenyi, P.  
 CORPORATE SOURCE: Inst. Isot., (Hung. Acad. Sci., Budapest, H-1525, Hung.  
 SOURCE: Catalysis Today (1993), 17(3), 439-47  
 CODEN: CATTEA; ISSN: 0920-5861  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

L38 ANSWER 239 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Nonconjugated unsatd. epoxy compds., e.g., 1,2-epoxy-7-octene, undergo hydrogenation primarily at the C:C bond to give saturated epoxy compds. The regioselectivity of the hydrogenation of conjugated unsatd. epoxy compds., e.g., 1,2-epoxy-3-butene, depends on the catalyst: Pd and Cu catalysts also yield the saturated epoxides, while Ni catalysts yield unsatd. alcs. via ring cleavage.  
 ACCESSION NUMBER: 1993:670924 CAPLUS  
 DOCUMENT NUMBER: 119:270924  
 TITLE: Hydrogenation of unsaturated epoxy compounds  
 AUTHOR(S): Grechina, N. V.; Mel'nik, L. V.; Kryukov, S. I.  
 CORPORATE SOURCE: Yarosl. Politekh. Inst., Yaroslavl, Russia  
 SOURCE: Neftekhimiya (1993), 33(2), 131-7  
 CODEN: NEFTAH; ISSN: 0028-2421  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 OTHER SOURCE(S): CASREACT 119:270924

L38 ANSWER 240 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 GI



AB HO[RN(R1)]nR1 [R = C2-24 linear or branched alkyl alkylene, aliphatic alkylene, cycloalkylene, arylene, aralkylene, (CH<sub>2</sub>CH<sub>2</sub>O)<sub>p</sub>(CH<sub>2</sub>CH<sub>2</sub>)<sub>q</sub>; p = 0, pos. integer; q = pos. integer; R1 = C1-24 linear or branched alkyl, aryl, aralkyl; n = 2-50] are prepared by reaction of a diol or an aldehyde with a primary amine followed by amination with a secondary amine in the presence of a Cu - 4-th period transition metal element - group VIII Pt group element catalyst optionally comprising an alkali metal or alkaline earth metal. The 4-th period transition metal element is selected from Cr, Mn, Fe, Co, Ni, and Zn and the group VIII Pt group element is selected from Pt, Pd, Ru, and Rh. Thus, 10% aqueous Na<sub>2</sub>CO<sub>3</sub> was slowly added dropwise to a stirred mixture of a synthetic zeolite (carrier) and an aqueous solution of Cu(NO<sub>3</sub>)<sub>2</sub>, Ni(NO<sub>3</sub>)<sub>2</sub>, and PdCl<sub>2</sub> (Cu: Ni: Pd metal mol ratio = 4:1:0.1) at 90°, after ripening for 1 h, a precipitate was filtered, washed with H<sub>2</sub>O, dried at 80° for 10 h, and fired at 400° for 1 h to give a catalyst. This catalyst (24 g) and 600 g 1,6-hexanediol were heated with stirring; when the temperature reached 100°, H was blown into the mixture at 10 L/h.kg while raising the temperature to 200°; a gaseous mixture of MeNH<sub>2</sub> and H was blown into the reaction mixture at 200° and 60 L/h.kg for approx. 4 h to give a viscous compound. A gaseous mixture of Me<sub>2</sub>NH and H was blown into the latter product in the presence of the same catalyst at 160°, the catalyst was removed by filtration to give a light yellow liquid which was distilled at 210-225° (temperature at the top of a distillation column) and 0.3 torr to give 40.3% a tert-amine (II).  
 ACCESSION NUMBER: 1993:580449 CAPLUS  
 DOCUMENT NUMBER: 119:180449  
 TITLE: Preparation of tertiary amine alcohol having terminal hydroxy group by catalytic amination of diol or aldehyde with primary amine  
 INVENTOR(S): Sotodani, Koshiro; Abe, Yutaka; Fukushima, Tetsuro  
 PATENT ASSIGNEE(S): Kao Corp, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKOXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05140051	A2	19930608	JP 1991-307681	19911122
JP 2941524	B2	19990825		

L38 ANSWER 240 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
AB A method is proposed for estimating the stability of modified surface  
PRIORITY APPLN. INFO.: JP 1991-307681 19911122  
OTHER SOURCE(S): CASREACT 119:180449; MARPAT 119:180449

L38 ANSWER 241 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A review with 44 refs., on history and recent status of transition metal  
**catalysts** in classified arrangement, i.e., **Cu**,  
**Ni**, **Pd**, **Ru**, and **Re**, including Heck reaction, CO  
insertion, etc.  
ACCESSION NUMBER: 1993:539814 CAPLUS  
DOCUMENT NUMBER: 119:139814  
TITLE: Transition metal **catalysts** for formation of  
condensation polymer  
AUTHOR(S): Kakimoto, Masaaki  
CORPORATE SOURCE: Fac. Eng., Tokyo Inst. Technol., Tokyo, 152, Japan  
SOURCE: Kagaku Kagyo (1993), 44(7), 541-5, 590  
CODEN: KAKOAY; ISSN: 0451-2014  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese

L38 ANSWER 242 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A method is proposed for estimating the stability of modified surface  
Raney **catalysts** for electrocatalytic processes on the example of H<sub>2</sub>O  
electroreducn. (e.g. in fuel cells). The acceleration of the tests is  
attained by polarization at c.d. 5-10 A/m<sup>2</sup> in 1.0-2.0M H<sub>2</sub>O<sub>2</sub> with periodic  
measurement of the current-voltage characteristics in the more dilute  
H<sub>2</sub>O<sub>2</sub> solns. Tests conducted on microelectrodes in a 3-electrode cell  
significantly simplified the stability estimation method. The use of  
contemporary physicochem. methods of study allowed one to establish the  
unique mechanism of change in activity in nominal and forced regimes.  
Some of the **catalysts** studied were Ni-Zn, Ni-  
Zn-Co-Mo, Ni-Zn-Co-Pd, Ni-Zn  
-Cd-Pd, Ni-Ag, and Ni-Zn  
-Pt-Cd-Pd.  
ACCESSION NUMBER: 1993:436261 CAPLUS  
DOCUMENT NUMBER: 119:36261  
TITLE: Stability of a hydrogen peroxide electrode  
**catalyst**  
AUTHOR(S): Akulova, G. V.; Druz, S. V.; Zagor'ev, A. M.;  
Zabotin, P. I.; Skundin, A. M.; Arinkin, Yu. M.  
CORPORATE SOURCE: Inst. Org. Katal. Elektrokhim. im. Sokolskogo,  
Alma-Ata, Kazakhstan  
SOURCE: Elektrokimiya (1992), 28(12), 1835-9  
CODEN: ELKXAY; ISSN: 0424-8570  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

L38 ANSWER 243 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB (R<sub>2</sub>)<sub>2</sub>N(R<sub>1</sub>-A)n-R<sub>1</sub>-N(R<sub>2</sub>)<sub>2</sub> [I; R<sub>1</sub> = C<sub>3</sub>-24 linear or branched alkylene,  
(CH<sub>2</sub>CH<sub>2</sub>O)p, (CH<sub>2</sub>CH<sub>2</sub>)q, alicyclic alkylene, aralkylene; p = 0, 1; q = pos.  
integer; A = NR<sub>3</sub>, piperazine-1,4-diyl; R<sub>3</sub> = C<sub>1</sub>-24 linear or branched  
alkyl or aralkyl; n = 2-50] are prepared by reacting HO-R<sub>1</sub>-OH and/or OHC-R<sub>4</sub>-CHO  
with H-A-H in the presence of a Cu-4th period transition  
metal-Group VIII Pt metal element **catalyst** optionally containing an  
alkali or alkaline earth metal and reacting the resultant mixture with  
(R<sub>2</sub>)<sub>2</sub>NH.  
I are useful as emulsifiers, epoxy hardeners, urethane **catalysts**  
, flotation agents, extracting agents, and additives for lubricants and  
can also be converted into quaternary ammonium salts and amine oxides. Thus,  
a mixture of 600 g 1,6-hexanediol and 24 g **Cu-Ni**-  
**Pd** (4:1:0.1) on zeolite (preparation given) was heated to 180°  
under a stream of H 10 L/h, thereto a gas mixture of H and MeNH<sub>2</sub> was  
introduced at 40 L/h for .apprx.5 h to give HO[(CH<sub>2</sub>)<sub>6</sub>NMe]n(CH<sub>2</sub>)<sub>6</sub>OH, and  
then a gas mixture of H and Me<sub>2</sub>NH was introduced at 40 L/h for .apprx.6  
h to give, after filtration for removing the **catalyst**,  
Me<sub>2</sub>N[(CH<sub>2</sub>)<sub>6</sub>NMe]n(CH<sub>2</sub>)<sub>6</sub>NMe<sub>2</sub> (n = 1-17) as a light brown liquid  
ACCESSION NUMBER: 1993:254388 CAPLUS  
DOCUMENT NUMBER: 118:254388  
TITLE: Preparation of linear poly(tertiary amine)  
INVENTOR(S): Fukushima, Tetsuro; Abe, Yutaka; Sotodani, Koshio  
PATENT ASSIGNEE(S): Kao Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04346965	A2	19921202	JP 1991-119959	19910524
JP 2971979	B2	19991108	JP 1991-119959	19910524

PRIORITY APPLN. INFO.: JP 1991-119959 19910524

L38 ANSWER 244 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The prepn. and properties as oxidants for alcs., aldehydes and activated primary alkyl halides of  $[M(105(OH))_2]5-$  ( $M = Cu, Ag$  or  $Au$ ),  $[M(OH)_2(105(OH))_2]6-$  ( $M = Ni, Pd$  or  $Pt$ ), or  $trans-[MO_2(105(OH))_2]6-$  ( $M = Ru$  or  $Os$ ) and  $[M6O_{24}T]5-$  ( $M = Mo$  or  $W$ ) are reported. The x-ray crystal structure of  $Na_4K[Au(105(OH))_2] \cdot KOH \cdot nH_2O$  shows the gold atom to be square planar with coordination by two bidentate  $[105(OH)]_4-$  ligands; the  $[Au(105(OH))_2]5-$  units are linked by  $NaO_6$  octahedra to form polymeric chains which are cross-linked by potassium ions.

ACCESSION NUMBER: 1993:182071 CAPLUS  
 DOCUMENT NUMBER: 118:182071  
 TITLE: Transition-metal periodato complexes. Their preparations and properties as catalytic oxidants, and

AUTHOR(S): x-ray crystal structure of  $Na_4K[Au(105(OH))_2] \cdot KOH \cdot 15H_2O$   
 Dengel, Andrew C.; El-Hendawy, Ahmed M.; Griffith, William P.; Mostafa, Sahar I.; Williams, David J.  
 CORPORATE SOURCE: Inorg. Chem. Chem. Crystallogr. Res. Lab., Imp. Coll. Sci. Technol. Med., London, SW7 2AZ, UK  
 SOURCE: Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1992), (24), 3489-95  
 CODEN: JCDTBI; ISSN: 0300-9246  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 245 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A method for preparing noble metal nets for catalytic processes (e.g., oxidation of  $NH_3$  or the recovery of vaporized Pt-group metals produced in  $NH_3$  oxidation) entails using wires formed from Pt-Rh alloys containing Rh 4-12 weight%, from Pt-Pd-Rh alloys containing Pd and Rh 4-12 weight%, from Pd-Ni alloys containing Ni 2-15 weight%, from Pd-Cu alloys containing Cu 2-15 weight%, or from Pd-Cu-Ni alloys containing Ni and Cu 2-15 weight% having a diameter of 50-120  $\mu m$ , a tensile strength of 900-1050 N/mm<sup>2</sup>, and an elastic limit of 0.5-3%.

ACCESSION NUMBER: 1993:176847 CAPLUS  
 DOCUMENT NUMBER: 118:176847  
 TITLE: Preparation of gas-permeable noble metal nets for catalytic processes  
 INVENTOR(S): Blass, Siegfried; Dueblier, Horst; Stoll, Thomas  
 PATENT ASSIGNEE(S): Degussa A.-G., Germany  
 SOURCE: Eur. Pat. Appl., 4 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 504723	A1	19920923	EP 1992-104159	19920311
EP 504723	B1	19930825		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, PT, SE				
IN 177376	AD	19970124	IN 1992-CA43	19920124
DE 4206199	C1	19921112	DE 1992-4206199	19920228
AT 93410	E	19930915	AT 1992-104159	19920311
ES 2046903	T3	19940201	ES 1992-104159	19920311
AU 9212917	A1	19920917	AU 1992-12917	19920313
AU 644725	B2	19931216		
CA 2063041	AA	19920917	CA 1992-2063041	19920313
NO 9200986	A	19920917	NO 1992-986	19920313
BR 9200886	A	19921117	BR 1992-886	19920313
ZA 9201890	A	19921125	ZA 1992-1890	19920313
JP 05064746	A2	19930319	JP 1992-54705	19920313
US 5268157	A	19931207	US 1992-851020	19920313
RU 2017520	C1	19940815	RU 1992-5011029	19920313
PL 166988	B1	19950731	PL 1992-293835	19920313
CN 1065027	A	19921007	CN 1992-101748	19920314
CN 1035042	B	19970604		
HU 63589	A2	19930928	HU 1992-872	19920316
HU 211812	B	19951228		
PRIORITY APPLN. INFO.:				
			DE 1991-4108625	A 19910316
			DE 1992-4206199	A 19920228
			EP 1992-104159	A 19920311

L38 ANSWER 246 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A series of transition metal atoms interacting with  $H, CH_4$  and other small mols. are studied at an ab-initio LCAO-MO-SCF level including intensive CI, with a CI space of approx.106 configuration. All the metals studied (Pt, Pd, Ni, Ru, Fe, Ag, Cu, Zn, Ga, Zn<sup>+</sup>, Zn<sup>2+</sup>, Ga<sup>+</sup>, Ga<sup>2+</sup>) show the importance of maximal d-occupation states, which usually are highly excited states for the isolated atom but become the ground states of the metal-mol. complex. This implies the existence of symmetry-avoided crossings. The importance of these avoided crossings for the catalytic phenomenon is analyzed.

ACCESSION NUMBER: 1993:176786 CAPLUS  
 DOCUMENT NUMBER: 118:176786  
 TITLE: Symmetry-avoided crossings and their role in the catalytic activity of transition metals

AUTHOR(S): Novaro, Octavio  
 CORPORATE SOURCE: Inst. Fis., UNAM, Mex.  
 SOURCE: Symmetries Phys., Proc. Int. Symp. (1992), Meeting Date 1991, 61-83. Editor(s): Frank, Alejandro; Wolf, Kurt Bernardo. Springer: Berlin, Germany.  
 CODEN: SBRXAS  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

L38 ANSWER 247 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process for producing a nitrile, comprises subjecting an alkane and ammonia in the gaseous state to catalytic oxidation in the presence of  $MoVbTeCnNbXnOx$  wherein: X is at least one of Mg, Ca, Sr, Ba, Al, Ga, Ti, In, Tl, Zr, Hf, Ta, Cr, Mn, W, Fe, Ru, Co, Rh, Ni, Pd, Pt, Zn, Sn, Pb, As, Sb, Bi, La and Ce; b is from 0.01 to 1.0; c is from 0.01 to 1.0; d is from 0 to 1.0; x is from 0.0005 to 1.0; and n is a number such that the total valency of the metal elements is satisfied. Thus, a feed gas of 1:1.2:10 propane/ $NH_3$ /air at a space velocity of 1000 h<sup>-1</sup> at 440° over  $MoV_0.4Te_0.2Nb_0.1Mn_0.1O_n$  gave 23.9% acrylonitrile with 57.5% conversion of propane.

ACCESSION NUMBER: 1993:149827 CAPLUS  
 DOCUMENT NUMBER: 118:149827  
 TITLE: Process for producing nitriles  
 INVENTOR(S): Ushikubo, Takashi; Oshima, Kazunori; Umezawa, Tiaki; Kiyono, Kenichi  
 PATENT ASSIGNEE(S): Mitsubishi Kasei Corp., Japan  
 SOURCE: Eur. Pat. Appl., 12 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 512846	A1	19921111	EP 1992-304144	19920508
EP 512846	B1	19950412		
R: DE, FR, GB, IT, NL				
JP 05148212	A2	19930615	JP 1992-114884	19920507
JP 523177	B2	20011204		
US 5231214	A	19930727	US 1992-880687	19920508
CN 1066445	A	19921125	CN 1992-103439	19920509
CN 1028752	B	19950607		
PRIORITY APPLN. INFO.:			JP 1991-104382	A 19910509

L38 ANSWER 248 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB  $\text{HO}[\text{Zn}(\text{ZINR1R2})]_n\text{ZOH}$  [I: R1, R2 = C1-4 alkyl; Z = C2-24 alkylene, C3-24 cycloalkylene, C6-24 arylene,  $(\text{CH}_2\text{CH}_2\text{O})_p(\text{CH}_2\text{CH}_2)_q$ ; etc.; Z1 = C1-9 alkylene; n = 1-50; p, q  $\geq 0$ ], useful as catalytically active polyol components in producing polyurethane (foams), were prepared by reacting a diol or dialdehyde with a diamine, in the presence of a catalyst containing Cu, a Group IV transition metal, a Group VIII metal, and optionally an alkali or alkaline earth metal. Thus, the title amino alc. I (R1 = R2 = Me, Z = C6H12, Z1 = C3H6, n = 2.7) (II) was prepared by condensation reaction of 1,6-hexanediol with  $\text{Me}_2\text{NCH}_2\text{CH}_2\text{CH}_2\text{NMe}_2$  over 5

h at 200°, in the presence of a Cu/Ni/Pd catalyst. A formulation comprising II, a mixture of aromatic amine-, sucrose polyether-, and glycerol polyether polyols, polyisocyanate TR-508X, glycerol, foam stabilizer L-5340, H<sub>2</sub>O, and foaming agent R-123 gave a rigid polyurethane foam with a better mold filling than a similar mixture containing  $\text{Me}_2\text{N}(\text{CH}_2)_6\text{NMe}_2$  as a catalyst and no I.

ACCESSION NUMBER: 1993:148717 CAPLUS  
 DOCUMENT NUMBER: 118:148717  
 TITLE: Preparation of novel tertiary amino alcohols as catalytically active diol components for polyurethane foams with improved moldability

INVENTOR(S): Abe, Hiroshi; Fukushima, Tetsuaki; Sotoya, Kohshiro; Harada, Shoichiro; Kitagawa, Hiroshi; Morii, Masayoshi; Isayama, Yasutoshi  
 PATENT ASSIGNEE(S): Kao Corp., Japan  
 SOURCE: Eur. Pat. Appl., 34 pp.  
 CODEN: EPXXDW

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 502516	A2	19920909	EP 1992-103760	19920305
EP 502516	A3	19930310		

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04279554	A2	19921005	JP 1991-38574	19910305
JP 2895973	B2	1990531		
JP 05093031	A2	19930416	JP 1992-32014	19920219
JP 3221712	B2	20011022		
CA 2062269	AA	19920906	CA 1992-2062269	19920304
US 5315041	A	19940524	US 1992-845594	19920304
US 5444099	A	19950822	US 1993-123165	19930920
			JP 1991-38574	A 19910305

PRIORITY APPLN. INFO.:  
 JP 1991-43849 A 19910308  
 JP 1992-32014 A 19920219  
 US 1992-845594 A3 19920304

L38 ANSWER 249 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Metal or oxide powders having particle size of <0.5  $\mu\text{m}$  and aggregates with sp. surface area of 2-250  $\text{m}^2/\text{g}$  are manufactured by heating an organic-acid metal salt in the presence of Pd at 0.5-20°/min for thermal dissociation at 5400°. The Pd is preferably present at 100-6000 ppm as a salt, and decreases the temperature of thermal dissociation of organic-acid metal salts (especially acetates, formates, oxalates or benzoates). The process

is suitable for manufacture of Mg, Ca, Sr, Ba, Cr, Mn, Fe, Co, Ni, Pd, Cu, Ag, Zn, Cd, In, Tl, Pb, or Bi powders. Thus, thermal dissociation temperature of Cu formate was 130° in the presence of 600 ppm Pd, vs. 200° without the Pd in comparable heating at 2°/min under N<sub>2</sub> atmospheric. The sp. surface area was 62.0  $\text{m}^2/\text{g}$ , vs. only 2.0  $\text{m}^2/\text{g}$  without Pd.

ACCESSION NUMBER: 1993:64991 CAPLUS  
 DOCUMENT NUMBER: 118:64991  
 TITLE: Thermal dissociation of organometal salts for manufacture of ultrafine metal or oxide powders

INVENTOR(S): Hidaka, Toshio; Kawakami, Takamasa; Makinose, Satoru  
 PATENT ASSIGNEE(S): Mitsubishi Gas Chemical Co., Inc., Japan  
 SOURCE: Eur. Pat. Appl., 13 pp.  
 CODEN: EPXXDW

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 508757	A1	19921014	EP 1992-303131	19920408

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06093316	A2	19940405	JP 1991-103165	19910408
JP 05065510	A2	19930319	JP 1991-206406	19910723
JP 05065511	A2	19930319	JP 1991-206409	19910723
JP 05156324	A2	19930622	JP 1991-324523	19911209
JP 05156325	A2	19930622	JP 1991-324524	19911209
JP 05156326	A2	19930622	JP 1991-324525	19911209
JP 05156323	A2	19930622	JP 1991-324538	19911209
US 5250101	A	19931005	US 1992-862218	19920402
			JP 1991-103165	19910408

PRIORITY APPLN. INFO.:  
 JP 1991-206406 19910723  
 JP 1991-206409 19910723  
 JP 1991-324523 19911209  
 JP 1991-324524 19911209  
 JP 1991-324525 19911209  
 JP 1991-324538 19911209

L38 ANSWER 250 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Pd, Pd-Ni, and Pd-Pb catalysts deposited on Al<sub>2</sub>O<sub>3</sub> or SiO<sub>2</sub> were used for removal of H<sub>2</sub> from mixts. of H<sub>2</sub> and CH<sub>4</sub> in air at room temperature Monometallic catalysts should contain at least 1% of the metal. Part of the Pd may effectively be replaced by another metal (Ni, Pb, or Cu).

ACCESSION NUMBER: 1993:10983 CAPLUS  
 DOCUMENT NUMBER: 118:10983  
 TITLE: Catalytic removal of hydrogen from mine gas

AUTHOR(S): Karski, S.  
 CORPORATE SOURCE: Inst. Gen. Chem., Tech. Univ., Lodz, Pol.  
 SOURCE: Zeszyty Naukowe - Politechnika Lodzka, Chemia (1991), 616(43), 503-17  
 CODEN: ZNPLAY; ISSN: 0458-1555

DOCUMENT TYPE: Journal  
 LANGUAGE: Polish

L38 ANSWER 251 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 35 refs. on 3 metal-catalyzed cross-coupling polymns. which result in C-C bond formation. Diarylacetylene monomers and dimers are prepared by the phase transfer Pd(0)/Cu(I)-catalyzed coupling of aryl halides with 2-methyl-3-butyn-2-ol. Aryl-alkyl bond-forming polymns. are achieved by the phase transfer Pd(0) catalyzed coupling of B-alkyl-9-borabicyclo[3.3.1]nonane derivs. with aryl halides. Soluble polyphenylenes are prepared by the Ni(0)-catalyzed homocoupling of substituted phenylenebistriflates in the presence of Zn.

ACCESSION NUMBER: 1992:490820 CAPLUS  
 DOCUMENT NUMBER: 117:90820  
 TITLE: Palladium(0)- and nickel(0)-catalyzed polymerization reactions

AUTHOR(S): Percec, Virgil; Pugh, Coleen; Cramer, Edwin; Okita, Shigeru; Weiss, Robert  
 CORPORATE SOURCE: Dep. Macromol. Sci., Case West. Reserve Univ., Cleveland, OH, 44106-2699, USA

SOURCE: Makromolekulare Chemie, Macromolecular Symposia (1992), 54/55(Int. Symp. New Polym. React. React. Mech., 1991), 113-50  
 CODEN: MCMSES; ISSN: 0258-0322

DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English

L38 ANSWER 252 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Aliphatic amines are prepared by a 2-stage amination of C2-9 fatty  
 alcs., over  
 $XaYbZcOd$  ( $X = Cu, Co, Ni, Y = Cr, Mo, W; Z = Al, Si, a = 1, b =$   
 $0, 0.01-0.8; c = 1-5; d = a$  value to satisfy valence) and  $AvBwCzDyOz$  ( $A =$   
 $Co, Ni, Pt, Pd, Ni; B = Zn, Cd,$   
 $Cu, Mg, Ca, Mn; C = Cr, V; D = Al, Si; v = 1, w = 0.1-2; x = 0,$   
 $0.1-1.5; y = 1-15; z = a$  value to satisfy valence) **catalysts**,  
 resp. A mixture of 2-ethylhexanol, H, and  $NH_3$  was passed over  $CuSi1.5O3$   
 at  
 260° and atmospheric pressure for 120 h and distilled to give a mixture  
 of  
 isooctylamine (I) 8.4, bis(2-ethylhexyl)amine (II) 25.8, isooctyl nitrile  
 59.5, isooctanol 2.1, and tris(2-ethylhexyl)amine 0.5 weight%, which was  
 passed over  $CoZnSi7.5O8.5$  at 200° and atmospheric pressure to give I  
 89.5,  
 II 7.8, isooctanol 1.5, and isooctyl nitrile 0.3 weight%.

ACCESSION NUMBER: 1992:447914 CAPLUS  
 DOCUMENT NUMBER: 117:47914  
 TITLE: preparation of aliphatic amines from C2-9 fatty  
 alcohols  
 INVENTOR(S): Xie, Jiaming; Cheng, Yongtai  
 PATENT ASSIGNEE(S): China Petrochemical Engineering Co., Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 17 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1057831	A	19920115	CN 1990-102887	19900630
CN 1025732	B	19940824		
PRIORITY APPLN. INFO.:			CN 1990-102887	19900630

L38 ANSWER 253 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Propenoic acid was hydrogenated at 25-30° by H gas with the  
**catalyst Cu-Pd-Ni** to form propionic  
 acid. Propionic acid was treated with  $Ca(OH)_2$  to form Ca propionate.  
 After drying, the product contained 99.9% Ca propionate. $H_2O$ .

ACCESSION NUMBER: 1992:406428 CAPLUS  
 DOCUMENT NUMBER: 117:6428  
 TITLE: Preparation of food additives - propionic acid and  
 calcium propionate  
 AUTHOR(S): Cao, Boxing; Xu, Yufeng; Li, Reihua  
 CORPORATE SOURCE: Tianjin Inst. Chem. Eng., Minist. Chem. Eng.,  
 Tianjin,  
 Peop. Rep. China  
 Huaxue Shijie (1991), 32(3), 136-8  
 CODEN: HUAKAB; ISSN: 0367-6358  
 Journal  
 Chinese

DOCUMENT TYPE:  
 LANGUAGE:

L38 ANSWER 254 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The **catalysts** comprise a support material in the form of sheet  
 metal, screens, netting, or granules forming a thermally compatible bond  
 with the catalytic material, and is resistant to corrosion by steam.  
 These **catalysts** do not lose their activity in H-containing atms.  
 that are likely to form during melt-downs in light water reactors and  
 heavy water-moderated reactors, and also during intermediate and final  
 storage of spent fuel rods in O-containing confined atms. A **Pd**-  
**Ni-Cu** alloy on ferritic steel was resistant to corrosion  
 in tests in saturated steam at 100° and 1 bar for 3.25 h, and then in  
 an atmospheric containing steam 44, air 51.6, and H 4.4 volume%.

ACCESSION NUMBER: 1992:261650 CAPLUS  
 DOCUMENT NUMBER: 116:261650  
 TITLE: Metal or alloy supported oxidation **catalysts**  
 for removal of hydrogen from explosive  
 hydrogen-oxygen-steam-containing atmospheres  
 INVENTOR(S): Chakraborty, Anuya Kumar; Rohde, Uerger; Klatt, Karl  
 Heinz; Wenzl, Helmut; Konrad, Ralf  
 PATENT ASSIGNEE(S): Forschungszentrum Juelich G.m.b.H., Germany;  
 Gesellschaft fuer Reaktorsicherheit m.b.H. (GRS)  
 SOURCE: Eur. Pat. Appl., 11 pp.  
 CODEN: EPIXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 467110	A1	19920122	EP 1991-110433	19910625
EP 467110	B1	19941123		
R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
DE 4041661	A1	19920416	DE 1990-4041661	19901222
DE 4041661	C2	19940601		
US 5198405	A	19930330	US 1991-724747	19910702
CA 2046820	AA	19920113	CA 1991-2046820	19910711
CA 2046820	C	20011002		
JP 06182225	A2	19940705	JP 1991-171366	19910711
RU 2099137	C1	19971220	RU 1991-5001055	19910711
PRIORITY APPLN. INFO.:			DE 1990-402236	A 19900712
			DE 1990-4041661	A 19901222

L38 ANSWER 255 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A selective chemical-vapor deposition system used to deposit the central  
 metal of a volatile complex preferentially on catalytically active  
 substrate surfaces was examined. **Copper(II)** acetylacetonate was  
 vaporized in a flow of H and decomposed on **Ni, Pd,** and  
 Al plates to deposit metallic **Cu**. When a **Ni** plate was used as  
 the substrate, deposition of metallic **Cu** occurred at  
 130-180° only on the substrate surfaces. The formation of an  
 ultrathin film of **Cu** of uniform thickness was confirmed. On a  
 Pd substrate, the formation of an ultrathin **Cu** film of uniform  
 thickness was also observed. On an Al substrate, however, deposition  
 occurred  
 nonselectively at .gtorsim.160°, not only on the substrate surface  
 itself, but also on the wall of the glass tube as well as the quartz wool  
 surrounding the Al plate. In addition, the formation of fine particles  
 of  
**Cu**, instead of thin film, was found on the substrate. Because the  
 deposition of **Cu** took place on catalytically active surfaces  
 selectively, the deposition was considered to proceed by a catalytic  
 hydrogenation of the C:O bond of the ligand, thus detaching it from the  
 Cu ion and allowing it to decompose the complex and deposit  
**Cu** metal.

ACCESSION NUMBER: 1992:201769 CAPLUS  
 DOCUMENT NUMBER: 116:201769  
 TITLE: Preparation of **copper** thin films by the  
 decomposition of **copper** acetylacetonate on  
 catalytically active substrate surfaces  
 AUTHOR(S): Miura, Hiroshi; Oki, Kazuo; Ochiai, Hisayoshi;  
 Higuchi, Hiroshi; Terasaka, Michio; Matsuda, Tsuneo  
 CORPORATE SOURCE: Dep. Appl. Chem., Saitama Univ., Urawa, 338, Japan  
 SOURCE: Bulletin of the Chemical Society of Japan (1992),  
 65(3), 892-6  
 CODEN: BCSJAB; ISSN: 0009-2673  
 Journal  
 English

DOCUMENT TYPE:  
 LANGUAGE:

L38 ANSWER 256 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Platinum, palladium, nickel and copper  
 surfaces were modified from acid baths containing SiW12O404- and  
 different  
 concns. of Cu2+. Improvement in the overpotential and in the exchange  
 c.d. of the H evolution reaction (h.e.r.) on the electrodes, in alkaline  
 medium, depends on the concentration of Cu2+. The copper concentration  
 displaying the best electrocatalytic behavior for the h.e.r. was  
 determined for  
 the different electrodes. The h.e.r. electrocatalytic activity was then  
 analyzed and related to the chemical composition of their surface  
 deposits. The  
 performance of the modified electrodes was also checked through  
 potentiostatic expts. The improvement in the electrocatalytic properties  
 was attributable, not to an increase in the surface area of the  
 electrode,  
 but to the chemical composition of the surface deposits.  
 ACCESSION NUMBER: 1992:161037 CAPLUS  
 DOCUMENT NUMBER: 116:161037  
 TITLE: Synergetic effect of electrode activation on the  
 hydrogen evolution reaction in alkaline medium on  
 platinum, palladium, nickel and  
 copper electrodes  
 AUTHOR(S): Amuzgat, K.; Savadogo, O.  
 CORPORATE SOURCE: Dep. Genie Metall. Genie Mater., Ec. Polytech.  
 Montreal, Montreal, QC, H3C 3A7, Can.  
 SOURCE: Journal of Applied Electrochemistry (1992), 22(2),  
 166-71  
 CODEN: JAELEB; ISSN: 0021-891X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 257 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The treatment of metal-containing waste involves a chemical change to  
 promote  
 spontaneous reduction. The metal-containing sludges (especially spent  
 electroplating  
 baths and regeneration solns. for ion exchanges) are treated with a  
 combination of oxidation agents, acids, chelating agents, and reducing  
 agents  
 at a controlled pH in the presence of a catalyst (especially Pt alloy)  
 and a small amount of the metal to be recovered. The oxidation agents  
 eliminate organic and/or inorg. sulfides, the acids and chelating agents  
 convert metal salts into an ionic form, and the reducing agents and pH  
 control destroy residual oxidation agents. The treated solution is then  
 finished by conventional wastewater treatment. The procedure is suitable  
 for recovery of Cu, Co, Au, Ni, Pd, and Sn,  
 but is not suitable for Al. The Pb is recovered as insol. PbSO4.  
 ACCESSION NUMBER: 1992:133340 CAPLUS  
 DOCUMENT NUMBER: 116:133340  
 TITLE: Autocatalytic conversion of metal-containing wastes  
 INVENTOR(S): Wemhoff, Mark F.  
 PATENT ASSIGNEE(S): Etus, Inc., USA  
 SOURCE: Ger. Offen., 5 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4114494	A1	19911114	DE 1991-4114494	19910503
PRIORITY APPLN. INFO.:			US 1990-521102	19900508

L38 ANSWER 258 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The catalytic hydrogenation of 5-hydroxymethylfurfural (HMF) in aqueous  
 medium  
 was studied in presence of Ni, Cu, Pt, Pd, Ru based  
 catalysts. In neutral aqueous medium, two major products are obtained  
 in very good yields: 2,5-bis(hydroxymethyl)furan (Cu, Pt, Ru)  
 and cis-2,5-bis(hydroxymethyl)tetrahydrofuran (Ni, Pd,  
 Ru). In acidic aqueous medium, hydrogenolysis reactions occur and the  
 hydrogenation of HMF leads to two other products: 1-hydroxyhexane-2,5-  
 dione and hexane-1,2,5-triol, mainly in presence of Pt and Ru. A  
 mechanism of formation of these two compds. is proposed.  
 ACCESSION NUMBER: 1992:128539 CAPLUS  
 DOCUMENT NUMBER: 116:128539  
 TITLE: Catalytic hydrogenation of 5-(hydroxymethyl)furfural  
 in aqueous medium  
 AUTHOR(S): Schiavo, V.; Descotes, G.; Mentech, J.  
 CORPORATE SOURCE: Ec. Super. Chim. Ind. Lyon, Univ. Lyon I,  
 Villeurbanne, 69622, Fr.  
 SOURCE: Bulletin de la Societe Chimique de France (1991),  
 (Sept.-Oct.), 704-11  
 CODEN: BSCFAS; ISSN: 0037-8968  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French

L38 ANSWER 259 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The hydrogenolysis of alkanes on the surface of Ni-Cu,  
 Ni-Pd, and Ru-Cu alloys and highly dispersed  
 Group VIII metals is reviewed with 76 refs. An idea is presented  
 involving the determination of the qual. and quant. composition of  
 active centers  
 catalyzing the hydrogenation of alkanes. A possible effect of the B5  
 centers occurring at the surface of the Group VIII on the course of the  
 hydrogenolysis is discussed.  
 ACCESSION NUMBER: 1992:105283 CAPLUS  
 DOCUMENT NUMBER: 116:105283  
 TITLE: Hydrogenolysis of alkanes on alloys and highly  
 dispersed Group VIII metals  
 AUTHOR(S): Nazimek, Dobieslaw  
 CORPORATE SOURCE: Inst. Chem., M. Curie-Sklodowska Univ., Lublin, Pol.  
 SOURCE: Chemia Stosowana (1989), 33(3), 363-89  
 CODEN: CHSWAP; ISSN: 0376-0898  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Polish

L38 ANSWER 260 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Reducibility of zeolite encaged Ni2+ was found by temperature-programmed reduction to increase in the following order Ni/NaY < Ni/MgY < Ni/CaY < (Pd + Ni)/NaY < (Pd + Ni)/MgY < (Pd + Ni)/CaY. In comparison with NaY supported samples, bimetallic MgY and CaY supported samples exhibited enhanced Pd2+ and Ni2+ reducibility as well as higher Hads/Me+ ratios after reduction at <500°. Temperature-programmed reduction and desorption results indicate that Mg2+ and Ca2+ ions are occupying the small cages in the zeolite, thus preventing the migration of the majority of Ni2+ and Pd2+ ions into these cages.

ACCESSION NUMBER: 1992:92242 CAPLUS  
 DOCUMENT NUMBER: 116:92242  
 TITLE: Enhanced reducibility of nickel and nickel + palladium in zeolite Y: blocking of small cages with cadmium(2+) or magnesium(2+) ions  
 AUTHOR(S): Feeley, Jennifer S.; Sachtler, Wolfgang M. H.  
 CORPORATE SOURCE: Dep. Chem., Northwestern Univ., Evanston, IL, 60208, USA  
 SOURCE: Catalysis Letters (1991), 9(5-6), 377-86  
 CODEN: CALLEER; ISSN: 1011-372X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 261 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The alkylation of aniline with 2-ethoxyethanol and o-toluidine with 2-methoxyethanol in the presence of various catalysts, e.g., Pd, Raney-Ni, AlPO4, silica gel, ZnO, was studied.

ACCESSION NUMBER: 1991:655709 CAPLUS  
 DOCUMENT NUMBER: 115:255709  
 TITLE: Synthesis of N-β-methoxy(ethoxy)ethylanilines in the presence of catalysts  
 AUTHOR(S): Karimov, R. K.; Burikhodzhayeva, E. A.; Arifov, Kh. N.; Abdullaev, Sh.; Dustmukhamedov, T. T.; Mirzaev, M. S.  
 CORPORATE SOURCE: Inst. Khim. Rastit Veshchestv, USSR  
 SOURCE: Uzbekskii Khimicheskii Zhurnal (1991), (3), 62-4  
 CODEN: UZKZAC; ISSN: 0042-1707  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 OTHER SOURCE(S): CASREACT 115:255709

L38 ANSWER 262 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The development of three new Pd(0) and Ni(0)-catalyzed reactions which lead to the synthesis of both novel monomers and polymers is described. The first reaction is a 3-step, 1-pot, phase-transfer-catalyzed Pd(0)/Cu(I) coupling of aryl halides with 2-methyl-3-buten-2-ol to yield bis(dialkoxypheyl)ethynylbenzene derivs. The second reaction is a polymerization based on a Pd(0)-catalyzed cross-coupling of alkylboron compds. and aromatic halides, and the third reaction is a novel polymerization based on a Ni(0)-catalyzed homocoupling of bisphenol triflates and triflates of substituted hydroquinones.

ACCESSION NUMBER: 1991:608663 CAPLUS  
 DOCUMENT NUMBER: 115:208663  
 TITLE: Palladium(0)- and nickel(0)-catalyzed polymerization reactions  
 AUTHOR(S): Pearce, V.; Pugh, C.; Cramer, E.; Weiss, R.  
 CORPORATE SOURCE: Dep. Macromol. Sci., Case West. Reserve Univ., Cleveland, OH, 44106, USA  
 SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1991), 32(1), 329-30  
 CODEN: ACPPAY; ISSN: 0032-3934  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 263 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The electrocatalytic activity of Cu, Mo, Ni, Pd (on active C), Ag and W as powders, as well as Co-, Cu-, Mn-, Ni- and Zr-borides was studied in a non-electrochem. way, by recording the variation of temperature vs. time in the case of the NZH4-H2O2 redox process taking place on their surfaces. The catalytic activity paralleled the electrocatalytic activity observed on electrodes prepared from the same materials.

ACCESSION NUMBER: 1991:480761 CAPLUS  
 DOCUMENT NUMBER: 115:80761  
 TITLE: Calorimetric determination of the electrocatalytical activity  
 AUTHOR(S): Oniciu, Liviu; Topan, Vasile A.; Muresan, Liana; Baldea, Ioan; Gheroiu, Dan  
 CORPORATE SOURCE: Fac. Chem. Technol., Univ. Cluj-Napoca, Cluj-Napoca, 3400, Rom.  
 SOURCE: Studia Universitatis Babes-Bolyai, Chemia (1989), 34(2), 16-22  
 CODEN: SUBCAB; ISSN: 0039-3401  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 264 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB An enantioselective synthesis of alkenyl sulfides by cross-coupling reactions between (E)- or (Z)-ArSCH:CHBr (I; Ar = Ph, 2-naphthyl, 2-pyridyl) and Grignard or organozinc reagents, using chiral complexes as **catalysts**, is described. The process is sensitive to several factors, e.g., the nature of the substrate, the organometallic reagent, the ligand, and the metal complex used as **catalyst**. Optical purities of up to 57% were achieved. The resulting unsatd. thioethers have been transformed into optically active 1-alkyl-2-phenylethenes or MeCHPhCO<sub>2</sub>H. A new method for the synthesis of the starting (Z)-I is also reported.

ACCESSION NUMBER: 1991:448945 CAPLUS  
 DOCUMENT NUMBER: 115:48945  
 TITLE: Asymmetric cross-coupling reactions:  
 enantioselective synthesis of alkenyl sulfides  
 AUTHOR(S): Cardellicchio, Cosimo; Flandanese, Vito; Naso, Francesco  
 CORPORATE SOURCE: Dip. Chim., Cent. Stud. Metodol. Innovative Sint. Org., Bari, I-70126, Italy  
 SOURCE: Gazzetta Chimica Italiana (1991), 121(1), 11-16  
 CODEN: GCITA9; ISSN: 0016-5603  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 115:48945

L38 ANSWER 265 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB HO(Z;Z2)HOH (Z1 = C1-24 alkylene, alicyclic alkylene, aralkylene, (CH2CH2O)p(CH2CH2)q; Z2 = NR1, 1,4-piperazinediyl; R1 = C1-24 (ar)alkyl; n = 2-50; p ≥ 0; q > 0) useful as as surfactants, **catalysts**, etc. (no data), were prepared by condensation of HOZ1OH with Z2H2. Thus, HO(CH2)6OH and a Cu/Ni/Pd **catalyst** (preparation given) were maintained .apprx.4 h at 180° under a stream of H and MeNH2 to give HO[(CH2)6NMe]n(CH2)6OH in which average n = 2.7.

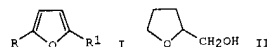
ACCESSION NUMBER: 1991:448841 CAPLUS  
 DOCUMENT NUMBER: 115:48841  
 TITLE: Preparation of 1,ω-dihydroxypolyamine oligomers  
 INVENTOR(S): Sotoya, Kohshiro; Abe, Hiroshi; Aikawa, Jun; Taniguchi, Hideki; Nishimoto, Uichiro  
 PATENT ASSIGNEE(S): Kao Corp., Japan  
 SOURCE: Eur. Pat. Appl., 13 pp.  
 CODEN: EPXWDW  
 Patent  
 DOCUMENT TYPE: English  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 414574	A2	19910227	EP 1990-309384	19900828
EP 414574	A3	19910619		
EP 414574	B1	19941026		
R: DE, ES, FR				
JP 03083955	A2	19910409	JP 1989-219046	19890825
JP 2756000	B2	19980525		
EP 587221	A1	19940316	EP 1993-202490	19900828
EP 587221	B1	19960424		
R: DE, ES, FR				
ES 2062390	T3	19941216	ES 1990-309384	19900828
ES 2086185	T3	19960616	ES 1993-202490	19900828
US 5488168	A	19960130	US 1993-46924	19930414
PRIORITY APPL. INFO.:			JP 1989-219046	A 19890825
			US 1990-563712	B1 19900807

L38 ANSWER 266 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Nickel boride P-2.00-Ni, P-2.00-Ni-Pd, P-2.00-Ni-Co **catalysts** were prepared in absolute alc. The selectivity of the **catalyst** to the atmospheric catalytic hydrogenation of α,β-unsatd. aldehydes was studied. It was found that the **catalysts** have a high selectivity and activity to α,β-olefinic double bond of unsatd. aldehydes.

ACCESSION NUMBER: 1991:408191 CAPLUS  
 DOCUMENT NUMBER: 115:8191  
 TITLE: Selective catalytic hydrogenation of α,β-unsaturated aldehydes  
 AUTHOR(S): Xu, Zhiluo; Zhang, Jingwen; Jiang, Yulin; Huang, Huamin  
 CORPORATE SOURCE: Dep. Chem., Jilin Univ., Changchun, Peop. Rep. China  
 SOURCE: Jilin Daxue Ziran Kexue Xuebao (1990), (4), 81-4  
 CODEN: CLTDDI; ISSN: 0529-0279  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese  
 OTHER SOURCE(S): CASREACT 115:8191

L38 ANSWER 267 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



AB The hydrogenation of methylfurfural (I; R = Me; R1 = CHO) in vapor and liquid phase on Pd/C, Pd/Al<sub>2</sub>O<sub>3</sub>, Cu-Cr, and Raney Ni **catalysts** was studied. The effects of **catalyst** and reaction conditions on the transformation of the CHO group were examined

It was found, that hydroxy- and methylfurans (I; R = H, Me; R1 = CH<sub>2</sub>OH, Me) or THF (II) can be obtained in high yields by selective hydrogenation of (I; R = H, Me; R1 = CHO). As a result of the presence of an electron donating Me group, (I; R = Me) is hydrogenated faster than (I; R = H).

ACCESSION NUMBER: 1991:185172 CAPLUS  
 DOCUMENT NUMBER: 114:185172  
 TITLE: Catalytic hydrogenation of 5-methylfurfural  
 AUTHOR(S): Stonkus, V.; Yuskovets, Zh. G.; Shimanskaya, M. V.  
 CORPORATE SOURCE: Inst. Org. Sint., Riga, 226006, USSR  
 SOURCE: Khimiya Geterotsiklicheskih Soedinenii (1990), (11), 1460-4  
 CODEN: KGSSAQ; ISSN: 0453-8234  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 OTHER SOURCE(S): CASREACT 114:185172



L38 ANSWER 268 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Oxygen scavengers, especially for treating hot water recirculating systems such as embedded floor heating systems using plastic tubes, comprise a catalyst of a nonnoble metal, e.g., Fe, Zn, Al, or Mg, and a noble metal, e.g., Pt, Ni, Pd, or PdO, in the form of loose pellets, sticks, fibers, or other shapes in a housing with a water inlet and outlet and a basin or pipe to collect sediment. The catalyst may be an expanded Fe mesh coated with a noble metal. The noble metal must have active centers, i.e., edges and corners, to promote O<sub>2</sub> conversion to H<sub>2</sub>O, with the byproducts forming metal oxides and hydroxides with the nonnoble metal.

ACCESSION NUMBER: 1991:68818 CAPLUS  
 DOCUMENT NUMBER: 114:68818  
 TITLE: Catalyst for binding dissolved oxygen in water or aqueous solutions  
 INVENTOR(S): Feucht, Peter  
 PATENT ASSIGNEE(S): Wella A.-G., Germany  
 SOURCE: Eur. Pat. Appl., 21 pp. CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 387816	A1	19900919	EP 1990-104767	19900314
EP 387816	B1	19930915		
R: AT, BE, CH, DE, DK, FR, GB, IT, LI, NL, SE				
DE 4008112	A1	19900920	DE 1990-4008112	19900314
AT 94512	E	19931015	AT 1990-104767	19900314
PRIORITY APPLN. INFO.:			DE 1989-3908208	19890314
			DE 1989-3920624	19890623
			DE 1990-4006377	19900301
			EP 1990-104767	19900314

L38 ANSWER 270 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Secondary amines are prepared by treatment of R<sub>1</sub>OH (R<sub>1</sub> = C<sub>8</sub>-28 linear alkyl, alkenyl), R<sub>2</sub>CHO (R<sub>2</sub> = C<sub>7</sub>-27 linear alkyl, alkenyl), or HOR<sub>3</sub>(OCH<sub>2</sub>CH<sub>2</sub>)NOH (R<sub>3</sub> = C<sub>2</sub>-18 linear alkylene; n = 0-5) with primary amines in the presence of Cu-Pt group metal catalysts while removing H<sub>2</sub>O under atmospheric pressure or 5100 atm (gage) and 150-250°. A mixture of stearyl alc. and Cu-Pd supported on a synthetic zeolite was stirred at 180° under atmospheric pressure of H while feeding laurylamine for 5 h to give a product containing 97.4% laurylstearylamine, vs. 90.2% for a control using Cu-Ni-Pd catalyst.

ACCESSION NUMBER: 1991:23407 CAPLUS  
 DOCUMENT NUMBER: 114:23407  
 TITLE: Preparation of secondary amines from primary amines  
 INVENTOR(S): Aikawa, Jun; Abe, Yutaka; Sotodani, Koshiro; Okabe, Kazuhiko  
 PATENT ASSIGNEE(S): Kao Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp. CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02202854	A2	19900810	JP 1989-22081	19890131
PRIORITY APPLN. INFO.:			JP 1989-22081	19890131

OTHER SOURCE(S): MARPAT 114:23407

L38 ANSWER 269 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Acid treatment of rice husk weakens or eliminates the fibers present in it, and no whiskers of SiC can be obtained. Extensive x-ray diffraction studies indicate that both SiC and Si<sub>2</sub>N<sub>2</sub>O are formed at 1300-1500° with N<sub>2</sub>. Products were obtained using Cd, Ni, Pd, Co, Zr, and V, and the intensities of most intense peaks of SiC and Si<sub>2</sub>N<sub>2</sub>O were compared to determine the effect of metal catalysts.

ACCESSION NUMBER: 1991:28644 CAPLUS  
 DOCUMENT NUMBER: 114:28644  
 TITLE: Silicon carbide and silicon nitride oxide (Si<sub>2</sub>N<sub>2</sub>O)  
 AUTHOR(S): Patel, M.; Prasanna, P.  
 CORPORATE SOURCE: Res. Dev. Lab., Natl. Aluminium Co. Ltd., Damanjodi, 763008, India  
 SOURCE: Intercceram (1990), 39(4-5), 48-9  
 CODEN: ITCRAC; ISSN: 0020-5214  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 271 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The effect of several Cu, Ni, Pd, Pt and Al<sub>2</sub>O<sub>3</sub> based hydrogenation catalysts on the kinetics of the title reaction was examined. The rate constant for each catalyst was determined by relating these const. to the rate constant for p-Mec<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>H, the relative acidity of each catalyst was calculated. Those catalysts, which showed high catalytic activity for the condensation, were also found to be effective reductive alkylation catalysts.

ACCESSION NUMBER: 1990:630576 CAPLUS  
 DOCUMENT NUMBER: 113:230576  
 TITLE: Condensation of 4-methyl-2-pentanone with aniline in the presence of several hydrogenation and oxidation catalysts  
 AUTHOR(S): Volf, Jiri; Li Bong Do; Krayzel, Zbynek  
 CORPORATE SOURCE: Vys. Sk. Chemickotechnol., Prague, Czech.  
 SOURCE: Chemicky Prumysl (1990), 40(6), 310-14  
 CODEN: CHPUA4; ISSN: 0009-2789  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Czech

L38 ANSWER 272 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The metals Mn, Fe, Ru, Co, Rh, Ir, **Ni**, **Pd**, Pt, **Ag**, and Au are present in 24 new water-soluble complexes containing the ligand tris(sodium m-sulfonatophenyl)phosphine (TPPTS) which were synthesized from readily accessible precursor compds. and were isolated pure by gel-permeation chromatog. Some of these compds. are the first authentic examples of homoleptic TPPTS metal complexes, viz., Ni(TPPTS)3, Pd(TPPTS)3, Pt(TPPTS)4, **Ag**(TPPTS)2(TPPTS\*), and Au(TPPTS)2(TPPTS\*) [TPPTS\* = P(C6H4-m-SO3- Na+)2(C6H4-m-SO3-)], each containing one water mol. per sodium ion. It is noted that the homoleptic TPPTS complexes have lower coordination nos. (TPPTS/metal ratios) than those of corresponding complexes of the parent triphenylphosphine.  
 ACCESSION NUMBER: 1990:612283 CAPLUS  
 DOCUMENT NUMBER: 113:212283  
 TITLE: Water soluble metal complexes and catalysts.  
 III. New water soluble metal complexes of sulfonated triphenylphosphine (TPPTS): Mn, Fe, Ru, Co, Rh, Ir, **Ni**, **Pd**, Pt, **Ag**, Au  
 Hermann, Wolfgang A.; Kellner, Juergen; Riepl, Herbert  
 Anorg.-Chem. Inst., Tech. Univ. Muenchen, Garching, D-8046, Germany  
 SOURCE: Journal of Organometallic Chemistry (1990), 389(1), 103-28  
 CODEN: JORCAL; ISSN: 0022-328X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 OTHER SOURCE(S): CASREACT 113:212283

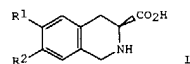
L38 ANSWER 273 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB H and its isotopes are recovered from water-containing gases (e.g., gas streams from nuclear fusion reactor) by reduction of water in the presence of CO and a catalyst. In contact with the catalyst layer, a porous glass carrier is provided for supporting a permselective membrane (**Pd**, **Ni**, etc.) to permeate the formed H and its isotopes selectively.  
 ACCESSION NUMBER: 1990:500358 CAPLUS  
 DOCUMENT NUMBER: 113:100358  
 TITLE: Apparatus for recovery of hydrogen and its isotopes  
 INVENTOR(S): Ozawa, Yoshihiro; Sakagami, Masaharu; Kondo, Masayoshi  
 PATENT ASSIGNEE(S): Hitachi, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01298001	A2	19891201	JP 1988-128323	19880527
PRIORITY APPLN. INFO.:			JP 1988-128323	19880527

L38 ANSWER 274 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A poisoning-resistant catalyst for removing H from a gas mixture containing H and O comprises a **Pd-Ni-Cu** alloy surface layer, a thermally conductive support, and a middle layer from V, Nb, Ta, Ti, or Zr between the surface layer and support.  
 ACCESSION NUMBER: 1990:485483 CAPLUS  
 DOCUMENT NUMBER: 113:85483  
 TITLE: Metal-layer catalyst for removing hydrogen from gas mixture  
 PATENT ASSIGNEE(S): Kernforschungsanlage Juelich G.m.b.H., Germany  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02083037	A2	19900323	JP 1989-201482	19890804
DE 3826503	A1	19900208	DE 1988-3826503	19880804
DE 3826503	C2	19920116		
RU 2012393	C1	19940515	RU 1990-4831057	19900903
PRIORITY APPLN. INFO.:			DE 1988-3826503	19880804
			EP 1989-116309	19890904

L38 ANSWER 275 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



AB The title compds. [I.HCl; R1,R2 = H, OH, alkyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl; R1R2 = OCH2O] were prepared in optically pure form by reduction of (Z)-3,4-R1R2C6H3CH:C(NHCOR)CO2R3 (R = Me, Ph; R3 = H, Me) with a catalyst comprising a chiral phosphine ligand and [M(diene)2]+X- (M = Rh, Ru, Pt, **Pd**, **Ni**; diene = norbornadiene, cyclooctadiene; X = PF6, ClO4, BF4) and Pictet-Spengler cyclocondensation of the resultant (S)-3,4-R1R2C6H3CH2CH(NHCOR)CO2R3.  
 ACCESSION NUMBER: 1990:458965 CAPLUS  
 DOCUMENT NUMBER: 113:58965  
 TITLE: Preparation of optically pure antihypertensive 1,2,3,4-tetrahydroisoquinoline-3- carboxylic acid derivatives  
 INVENTOR(S): O'Reilly, Neil J.; Lin, Henry C.  
 PATENT ASSIGNEE(S): Occidental Chemical Corp., USA  
 SOURCE: U.S., 7 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4912221	A	19900327	US 1988-263456	19881027
GB 2224277	A1	19900502	GB 1989-21226	19890920
JP 2638744	A1	19900511	FR 1989-13980	19891025
JP 02180870	A2	19900713	JP 1989-279601	19891026
DE 3935910	A1	19900503	DE 1989-3935910	19891027
FR 2640522	A1	19900622	FR 1990-1336	19900206
PRIORITY APPLN. INFO.:			US 1988-263456	19881027

OTHER SOURCE(S): CASREACT 113:58965; MARPAT 113:58965

L38 ANSWER 276 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The layered metal system comprises a heat-conducting support loaded with an intermediate metal layer of V, Nb, Ta, Ti, or Zr and a surface layer of a PdNiCu alloy. The support can be Al, Cu, Ni or alloys of these metals, forming a layer 100 µm to 10 mm, especially 1 mm, thick. The system is suitable for catalytic oxidation of H in the presence of O, as well as aggressive impurities such as I, S, and P compounds.

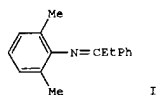
ACCESSION NUMBER: 1990:426339 CAPLUS  
 DOCUMENT NUMBER: 113:26339  
 TITLE: Layered metal system for removal of hydrogen from gas mixtures  
 INVENTOR(S): Chakraborty, Amiya K.; Kersting, Edmund; Rohde, Juergen; Klatt, Karl Heinz; Wenzl, Helmut; Konrad, Ralf  
 PATENT ASSIGNEE(S): Kernforschungsanlage Juelich G.m.b.H., Germany; Gesellschaft fuer Reaktorsicherheit m.b.H.  
 SOURCE: Ger. Offen., 5 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3826503	A1	19900208	DE 1988-3826503	19880804
DE 3826503	C2	19920116		
EP 358912	A1	19900321	EP 1989-114034	19890729
EP 358912	B1	19920108		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 71338	E	19920115	AT 1989-114034	19890729
ES 2032344	T3	19930201	ES 1989-114034	19890729
US 4992407	A	19910212	US 1989-387652	19890731
FI 8903688	A	19900205	FI 1989-3688	19890803
SU 1779224	A3	19921130	SU 1989-4614724	19890803
JF 02063037	A2	19900323	JF 1989-201482	19890804
EP 416140	A1	19910313	EP 1989-116309	19890904
EP 416140	B1	19941221		
R: BE, CH, DE, ES, FR, GB, LI, NL, SE				
RU 2012393	C1	19940515	RU 1990-4831057	19900903
PRIORITY APPLN. INFO.:			DE 1988-3826503	19880804
			EP 1989-114034	19890729
			EP 1989-116309	19890904

L38 ANSWER 277 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title process was carried out with Pd-Ni and Cu-Ni catalysts. At 3-5% Pd or Cu, the activity of the catalysts was highest and high yields of piperidine were obtained.

ACCESSION NUMBER: 1990:178605 CAPLUS  
 DOCUMENT NUMBER: 112:178605  
 TITLE: Electrocatalytic reduction of pyridine  
 AUTHOR(S): Tusupbekova, G. K.; Kirilius, I.; Asta'eva, Z. M.; Sokol'skii, D. V.  
 CORPORATE SOURCE: Inst. Org. Sint. Ugolekhim., Karaganda, USSR  
 SOURCE: Khimiko-Farmatsevticheskii Zhurnal (1989), 23(9), 1120-2  
 CODEN: KHFZAN; ISSN: 0023-1134  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 278 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



AB [1-(Arylimino)alkyl]zinc, prepared by α-addition of organozinc to aryl isocyanide, was coupled with aromatic iodide in the presence of a Pd or Ni catalyst to give the corresponding N-aryl aromatic imine. Thus, 2,6-xylyl isocyanide reacted with Et2Zn and then PhI with PdCl2(PPh3)2 as catalyst to give 55% imine I.

ACCESSION NUMBER: 1990:178177 CAPLUS  
 DOCUMENT NUMBER: 112:178177  
 TITLE: Transition metal-catalyzed coupling of [1-(arylimino)alkyl]zinc with aromatic iodide  
 AUTHOR(S): Murakami, Masahiro; Ito, Hirohide; Abu Bakar, Wan Azelee bin Wan; Abu Bakar Bin Baba; Ito, Yoshihiko  
 CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606, Japan  
 SOURCE: Chemistry Letters (1989), (9), 1603-6  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 112:178177

L38 ANSWER 279 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB CF3CH2F (I) is prepared by gas-phase catalytic fluorination of CF3CH2Cl (II) by HF at 300-500° in the presence of O while minimizing oxidation of liberated HCl to Cl and H2O. The catalyst consists of a metal (Co, Mn, Ni, Pd, Ag, and/or Ru) on AlF3, the latter being formed in situ from Al2O3 during catalyst preparation. For example, a catalyst containing 2% Co (prepared from CoCl2 on Al2O3 using HF at 450°) was fed HF, I, and O in resp. mol ratio 10:1:0.02 at 410° with a 30-s contact time for 9 h to give I with average 93.7% selectivity and 33.5% conversion of II. Data for runs using a higher ratio of HF and other metals are given.

ACCESSION NUMBER: 1990:157663 CAPLUS  
 DOCUMENT NUMBER: 112:157663  
 TITLE: Preparation of 1,1,1,2-tetrafluoroethane by fluorination of 1,1,1-trifluoroethane with hydrogen fluoride over metal catalysts  
 INVENTOR(S): Manzer, Leo E.  
 PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA  
 SOURCE: Braz. Pedido PI, 21 pp.  
 CODEN: BFXDX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Portuguese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 8900588	A	19891010	BR 1989-588	19890210
US 5051537	A	19910924	US 1990-519328	19900504
PRIORITY APPLN. INFO.:			US 1988-151484	19880212
			US 1988-156484	19880212
			US 1989-355868	19890519

L38 ANSWER 280 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The mechanism of the hydrogenation of CO was studied on a **Pd-Ni** membrane catalyst at 563-663 K. The external surface of the membrane was coated with **Cu**. H traveled by diffusion from the interior toward the exterior surface of the membrane. The presence of CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, C<sub>2</sub>H<sub>4</sub>, CH<sub>2</sub>OH, CO<sub>2</sub>, and H<sub>2</sub>O was detected among the reaction products. The application of a thick coat of **Cu** prevents the formation of C<sub>2</sub>H<sub>4</sub>. The formation of CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, and CH<sub>3</sub>OH proceeds through the same intermediate. The saturated and unsatd. hydrocarbons are forward at different active centers.

ACCESSION NUMBER: 1990:80680 CAPLUS  
 DOCUMENT NUMBER: 112:80680  
 TITLE: Hydrogenation of carbon monoxide on a **palladium-nickel** alloy coated with **copper**  
 Charaja Bar, Ada Ruth  
 Fac. Cienc. Fis. Mat. Nat., P. Lumumba Univ., Moscow, USSR  
 SOURCE: Boletin de la Sociedad Quimica del Peru (1989), 55(3), 164-71  
 CODEN: BSQPAQ; ISSN: 0037-8623  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Spanish

L38 ANSWER 281 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB R1R2C:CR3CH2NH2 (R1-R3 = H, C1-8 aliphatic hydrocarbyl, alicyclic or aromatic hydrocarbyl) or (R1R2C:CR3CH2)2NH and their derivs., useful as materials for cationic polymers, drugs, and agrochems., were prepared by treating (R1R2C:CR3CH2)3N or their derivs. with NH<sub>3</sub> in the presence of Zl compds. of **Ni**, **Pd**, and **Pt**, and trivalent P compds., and optionally acids. Thus, 7.96 g triallylamine was stirred with 2.97 g NH<sub>3</sub> in propylene glycol in the presence of PdCl<sub>2</sub>(PPh<sub>3</sub>)<sub>2</sub> and Bu<sub>3</sub>P at 110° for 2 h to give 0.18 g monoallylamine and 1.19 g diallylamine.

ACCESSION NUMBER: 1989:632071 CAPLUS  
 DOCUMENT NUMBER: 111:232071  
 TITLE: Preparation of mono- or diallylamines  
 INVENTOR(S): Ishimura, Yoshimasa; Ooe, Takami; Nagato, Nobuyuki  
 PATENT ASSIGNEE(S): Showa Denko K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01125348	A2	19890517	JP 1987-282059	19871110
PRIORITY APPLN. INFO.:			JP 1987-282059	19871110

OTHER SOURCE(S): MARPAT 111:232071

L38 ANSWER 282 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The study of the second metal influence upon the basic catalyst **Pd/γ-Al<sub>2</sub>O<sub>3</sub>** was made by a test reaction: styrene hydrogenation. Catalysts with variable contents of palladium but in which the concentration of the second metal was constantly maintained were prepared. The choice of the second metal was made from the first transition series Mn, Fe, Co, Ni, and Cu. The kinetics of the hydrogenation reaction as influenced by addition of the second metal to palladium was also investigated. Some correlations between catalytic activity and selectivity of bimetallic catalysts **Pd-Me/γ-Al<sub>2</sub>O<sub>3</sub>** and possible interactions of the supported components and support were established.

ACCESSION NUMBER: 1989:614012 CAPLUS  
 DOCUMENT NUMBER: 111:214012  
 TITLE: Hydrogenation of styrene on bimetallic supported catalysts **Pd-Me/γ-Al<sub>2</sub>O<sub>3</sub>** (Me = Mn, Fe, Co, Ni, and Cu)  
 Parvulescu, Vasile; Parvulescu, Viorica; Nicolescu, Ioan V.; Sandulescu, Ioan  
 Dep. Chem. Technol., Polytech. Inst. Bucharest, Bucharest, Rom.  
 SOURCE: Revue Roumaine de Chimie (1988), 33(11-12), 1041-53  
 CODEN: RCHXAX; ISSN: 0035-3930  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 283 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Hydrogenation of CO at 1 atm and 563-663 K over **Pd-Ni** alloy coated with a disperse layer of **Ni** gave C<sub>3</sub>H<sub>8</sub>, propylene, and minor amts. of butane and butylene, in addition to the CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, and C<sub>2</sub>H<sub>4</sub> formed with the uncoated alloy. **Pd-Ni** alloy coated with a disperse layer of **Cu** showed high selectivity for MeOH formation. The activity and selectivity of the catalysts depended on the method of H introduction into the reaction zone.

ACCESSION NUMBER: 1989:517206 CAPLUS  
 DOCUMENT NUMBER: 111:117206  
 TITLE: Conversions of carbon monoxide on membrane catalysts produced from palladium alloys. II. Interaction of carbon monoxide and hydrogen on a **palladium-nickel** alloy coated with disperse nickel or **copper** layers  
 Gur'yanova, O. S.; Serov, Yu. M.; Gul'yanova, S. G.; Gryaznov, V. M.  
 CORPORATE SOURCE: Univ. Druzhby Nar. im. Patrisa Lumumby, Moscow, USSR  
 SOURCE: Kinetika i Kataliz (1989), 30(2), 471-4  
 CODEN: KNKTA4; ISSN: 0453-8811  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 284 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The performances of alumina-supported Group VIII metal **catalysts** promoted by Mo-Na<sub>2</sub>O in the synthesis of alcs. from syngas were examined  
 The activity for alc. synthesis at 255°C decreased in the order Rh > Ir > Ru > **Pd** > **Ni** > Pt > Cu > Co > Re > Fe.  
 The highest activity for alc. synthesis was achieved with 3% Rh-5%Mo-1.25% Na<sub>2</sub>O/Al<sub>2</sub>O<sub>3</sub> (480 g/L **catalyst**.h); however, this **catalyst** showed a rapid decay in activity. Ir-Mo-Na<sub>2</sub>O and Ru-Mo-Na<sub>2</sub>O **catalysts** also had a high activity for alc. synthesis and did not show any decay during the period of the expts.  
 ACCESSION NUMBER: 1989:460320 CAPLUS  
 DOCUMENT NUMBER: 111:60620  
 TITLE: Alcohol synthesis from syngas on Group VIII metal **catalysts** promoted by molybdenum-sodium oxide  
 AUTHOR(S): Inoue, Masashi; Nakajima, Keizo; Kurusu, Akira; Miyake, Takanori; Inui, Tomoyuki  
 CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606, Japan  
 SOURCE: Applied Catalysis (1989), 49(2), 213-17  
 CODEN: APCADI; ISSN: 0166-9834  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 285 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB An atmospheric gas oil and 3 lubricating oil raffinates are catalytically dewaxed (shape selective hydrocracking) at 623-673 K, 5 MPa, and space velocity 1.68-3 h<sup>-1</sup> on ZSM 5 zeolite **catalysts**. The isomorphous substitution of framework Al with B or Fe attenuates surface acidity and enhances the selectivity for dewaxed oils. The activity and selectivity of the **catalysts** increase as zeolite crystallite size decreases. The effects of Pt, **Pd**, **Ni**, **Zn**, and **Pd**-**Zn** on the activity of these **catalysts** are also determined. The hydrogenolysis activity of these metal-zeolite **catalysts** is suppressed by sulfidation, thus, suppressing coke formation.  
 ACCESSION NUMBER: 1989:460687 CAPLUS  
 DOCUMENT NUMBER: 111:60687  
 TITLE: Catalytic dewaxing of petroleum oils over pentasil metallosilicate zeolites  
 AUTHOR(S): Sivasanker, Subramanian; Waghmare, Kashinath J.; Reddy, Madhusudhan; Ratnasamy, Paul  
 CORPORATE SOURCE: Natl. Chem. Lab., Pune, 411 008, India  
 SOURCE: Proc. - Int. Congr. Catal., 9th (1988), Volume 1, 120-7. Editor(s): Phillips, M. J.; Ternan, M. Chem. Inst. Can.: Ottawa, Ont.  
 CODEN: 56N2A9  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

L38 ANSWER 286 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 43 refs. on the title reactions and their application in natural product synthesis.  
 ACCESSION NUMBER: 1989:407093 CAPLUS  
 DOCUMENT NUMBER: 111:7093  
 TITLE: New synthetic methods. 75. Intramolecular stoichiometric (lithium, magnesium, zinc) and catalytic (nickel, palladium, platinum) metallo-ene reactions in organic synthesis  
 AUTHOR(S): Oppolzer, Wolfgang  
 CORPORATE SOURCE: Dep. Chim. Org., Univ. Geneva, Geneva, CH-1211/4, Switz.  
 SOURCE: Angewandte Chemie (1989), 101(1), 39-53  
 CODEN: ANCEAD; ISSN: 0044-8249  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: German

L38 ANSWER 287 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The H discharge on polished pure Co, **Cu**, **Fe**, **Mo**, **Nb**, **Ni**, **Pd**, **Pt**, **V**, **W**, and **Zr** cathodes in 30 weight% KOH at 70° was investigated at a constant c.d. of 100 mA-cm<sup>-2</sup>. Initial electrocatalytic activity for the H evolution reaction decreases in the following order:  
 Pt > **Ni** > **Co** > **Fe**, **Mo**, **Pd** > **W** > **Cu** > **V** > **Nb** > **Zr**. This order is largely modified after 104 s at 100 mA-cm<sup>-2</sup> because of deactivation or activation. The addition of Na molybdate to the electrolyte at that moment in time results in a rapid drop in the H overpotential. All electrodes reach the same H overpotential 6 + 104 s after the addition of 4mM Na molybdate.  
 ACCESSION NUMBER: 1989:239192 CAPLUS  
 DOCUMENT NUMBER: 110:239192  
 TITLE: In situ activation by sodium molybdate on various metallic substrates during alkaline water electrolysis.  
 AUTHOR(S): Huot, J. Y.; Brossard, L.  
 CORPORATE SOURCE: Inst. Rech. Hydro-Quebec, Varennes, QC, J0L 2P0, Can.  
 SOURCE: International Journal of Hydrogen Energy (1989), 14(4), 229-32  
 CODEN: IJHEDX; ISSN: 0360-3199  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 288 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Treating  $M[M(CO)_nL]$  [ $M = K, Na; M(CO)_nL = CpFe(CO)_2, CpW(CO)_3, Mn(CO)_5, Re(CO)_5; Cp = \eta^5\text{-cyclopentadienyl}$ ] with  $ZnCl_2$  in THF gave **zinc** derivs.  $Zn[M(CO)_nL]_2$ , which when treated in situ with  $RC_6H_4X$  ( $R = Ph, p\text{-cyano}, p\text{-tolyl}, p\text{-Cl}, p\text{-MeCO}, o\text{-AcO}; X = Br, Iodo$ ) in the presence of  $R_1Pd(PPh_3)Cl_2$  ( $R_1 = Ph, 4\text{-O}_2NC_6H_4$ ),  $Pd(MeCN)_2Cl_2$ , or  $Ni(PH_2PC_6H_2CH_2PPh_2)Cl_2$  gave 55-86% cross-coupling products  $RC_6H_4M(CO)_nL$ .  
 ACCESSION NUMBER: 1989:213016 CAPLUS  
 DOCUMENT NUMBER: 110:213016  
 TITLE: Arylation of transition metal carbonylates catalyzed by some complexes of palladium and nickel  
 AUTHOR(S): Artamkina, G. A.; Mil'chenko, A. Yu.; Sumagin, N. A.; Seletskaya, I. P.; Reutov, O. A.  
 CORPORATE SOURCE: Mosk. Gos. Univ., Moscow, USSR  
 SOURCE: Metalloorganicheskaya Khimiya (1988), 1(1), 34-9  
 CODEN: MEKHGX; ISSN: 0235-0114  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 289 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title properties of immersed bimetallic Cu-Pd and **Ni-Pd catalysts** have been examined in ethyl acetoacetate hydrogenation. They depend on both the nature of support and the method for introducing metal components onto support.  
 ACCESSION NUMBER: 1989:172513 CAPLUS  
 DOCUMENT NUMBER: 110:172513  
 TITLE: On catalytic and enantioselective activity of supported **copper-palladium** and **nickel-palladium catalysts**  
 AUTHOR(S): Kuznetsova, T. I.; Murina, I. P.; Vedenyapin, A. A.; Akimov, V. M.; Klabunovskii, E. I.  
 CORPORATE SOURCE: Inst. Org. Chem., Moscow, 117913, USSR  
 SOURCE: Reaction Kinetics and Catalysis Letters (1988), 37(2), 363-5  
 CODEN: RKCLAU; ISSN: 0304-4122  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 290 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB 4-Methyl-1-pentene is prepared by contacting propylene at 150-220° with dimerization **catalysts** containing K and  $K_2CO_3$  and  $\Delta$ l metal chosen from Mn, Cr, **Co, Ni, Pd, Ti**, or Cu. The **catalyst** is prepared in the presence of a high boiling liquid by forming a suspension of  $K_2CO_3$  in the inert liquid, introducing the metals in powdered form with strong stirring, heating the reaction mixture to a temperature above the fusion temperature of K, introducing the K with strong stirring, heating to 140-180° for 1-3 h, and cooling the mixture to ambient temperature. These **catalysts** have higher dimerization activity and selectivity than conventional **catalysts**.  
 ACCESSION NUMBER: 1989:156512 CAPLUS  
 DOCUMENT NUMBER: 110:156512  
 TITLE: **Catalysts** and process for the dimerization of propylene to 4-methyl-1-pentene  
 INVENTOR(S): Fuchs, Jean Marc; Gallot, Michel; Saussine, Lucien  
 PATENT ASSIGNEE(S): Norsolor S. A., Fr.  
 SOURCE: Eur. Pat. Appl., 7 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 291411	A1	19881117	EP 1988-401157	19880511
EP 291411	B1	19920415		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
FR 2615123	A1	19881118	FR 1987-6828	19870515
FR 2615123	B1	19890630		
WO 8808834	A1	19881117	WO 1988-FR234	19880511
W: BR, JP, KR, US				
BR 8807504	A	19900417	BR 1988-7504	19880511
JP 02504484	T2	19901220	JP 1988-504312	19880511
AT 74894	E	19920515	AT 1988-401157	19880511
ES 2030514	T3	19921101	ES 1988-401157	19880511
IN 169984	A	19920125	IN 1988-CA390	19880513
CA 1327563	A1	19940308	CA 1988-566824	19880513
CN 1034000	A	19890719	CN 1988-103906	19880514
CN 1020863	B	19930526		
PRIORITY APPLN. INFO.:			FR 1987-6828	19870515
			EP 1988-401157	19880511
			WO 1988-FR234	19880511

OTHER SOURCE(S): CASREACT 110:156512

L38 ANSWER 291 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A substrate is coated with a thin layer of a liquid sol or gel containing alkoxysilane and plated with metal. The sol (gel) is preferably impregnated with a transition metal compound which can be activated (by chemical reduction or heating) to form a **catalyst** film for the plating. The transition metal can be **Pd, Ni**, and/or **Cu**, the plated metal is preferably **Cu**, and the substrate can be glass,  $Al_2O_3$ , ceramic, or polyimide. The use of this sol (gel) layer increases the bonding between the substrate and the plated metal.  
 ACCESSION NUMBER: 1989:140295 CAPLUS  
 DOCUMENT NUMBER: 110:140295  
 TITLE: Method for plating substrate  
 PATENT ASSIGNEE(S): International Business Machines Corp., USA  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXKAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63203775	A2	19890823	JP 1987-319137	19871218
EP 280918	A2	19880907	EP 1988-101693	19880205
EP 280918	A3	19890726		
R: DE, FR, GB				
PRIORITY APPLN. INFO.:			US 1987-16603	19870219

L38 ANSWER 292 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Mono- or multimetal microaggregates in a monodisperse phase in a solid or liquid medium and of a size uniformly <5 nm are obtained by irradiation of a metal salt or a mixture of salts, by means of an ionizing radiation source, comprising dissolving a metal salt or a mixture of metal salts in an appropriate solvent in the presence of an oxidizing radical scavenger, a surfactant, and a support, and carrying out irradiation. The metal microaggregates are useful for catalytic photoreduction of water. More specifically, the microaggregates are selected from Hg, Pd, Rh, Ru, Os, Cu, Ni, Co, Pb, Zn, Fe, Sb, Sn, Bi, and alloys of Fe-Cu, Ni-Ag, Ni-Cu, Ni-Pt, Ni-Cu, Ni-La, Pd-Ag-Au, and Pd-Ag-Cu.

ACCESSION NUMBER: 1988:598325 CAPLUS  
 DOCUMENT NUMBER: 109:198325  
 TITLE: Mono- or multimetal microaggregates, a method for their preparation, and their application in the catalysis of the photoreduction of water  
 INVENTOR(S): Belloni, Cofler Jacqueline; Marignier, Jean Louis; Delcourt, Euvette Marie Odile; Minana, Lourseau Michele  
 PATENT ASSIGNEE(S): Centre National de la Recherche Scientifique, Fr.  
 SOURCE: U.S., 6 pp. Cont.-in-part of U.S. 4,629,709.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4745094	A	19880517	US 1986-909055	19860918
FR 2565844	A1	19851220	FR 1984-9196	19840613
FR 2565844	B1	19881028		
US 4629709	A	19861216	US 1985-744445	19850613
PRIORITY APPLN. INFO.:			FR 1984-9196	19840613
			US 1985-744445	19850613

L38 ANSWER 294 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The interaction of Me2S and Me2S2 was studied with metal films of Fe, Pd, Ni, Al, and Cu at 193-500 K with Me2S and 223-600 K in the case of Me2S2. At 193 K, mainly mol. chemisorption of Me2S occurred on the films. With Me2S2, multilayer adsorption, involving both chemisorption and van der Waals adsorption, took place on the films at 223 K. Dissociative chemisorption of Me2S or Me2S2 began at >300 K and was accompanied by the evolution of gaseous products. The latter involved H2, CH4, and C2H6 gases with Me2S and H2, CH4, C2H6, MeSH, and Me2S subsequent to the dissociation of Me2S2. Addnl. gaseous products throughout the decomposition on the oxidized films were CO, H2O, and C2H4. The rate of Me2S or Me2S2 chemisorption depended on the pressure of the reacting gas, and the kinetic data indicated the operation of a compensation effect throughout the interaction of Me2S or Me2S2 with the films. On the basis of kinetic data it was possible to arrange the metal films in the order of decreasing activity toward Me2S or Me2S2 adsorption. The transition-metal films showed greater activity than Al and Cu, and, among the former films, Fe showed the greatest activity, for chemisorption of Me2S and Me2S2. All the metals have higher tendencies for Me2S adsorption than for Me2S2.

ACCESSION NUMBER: 1988:569746 CAPLUS  
 DOCUMENT NUMBER: 109:169746  
 TITLE: Adsorption and catalytic decomposition of dimethyl sulfide and dimethyl disulfide on metal films of iron, palladium, nickel, aluminum and copper  
 AUTHOR(S): Al-Haidary, Yousif Kadim; Saleh, Jalal Mohammed  
 CORPORATE SOURCE: Coll. Sci., Univ. Baghdad, Baghdad, Iraq  
 SOURCE: Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases (1988), 84(9), 3043-57  
 CODEN: JCFTAR; ISSN: 0300-9599  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 293 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Adsorption and decomposition of MeSH, EtSH, and PrSH on clean and oxidized films of Fe, Pd, Ni, Al, and Cu were studied at 193-500 K. Mainly mol. chemisorption of the mercaptans occurred on the films at 193 K. All the mercaptans were chemisorbed dissociatively on all surfaces at >300 K by the rupture of S-H, C-H and C-C bonds. The proposed dominant pathway involved decomposition of the mercaptan to form a thiolate(-SR) on a surface site and a H atom on the adjacent site. In another less important pathway, SH and alkyl groups are formed. Surface recombination reactions of the bound species occurs at >300 K yielding H and hydrocarbons together with some alkyl sulfide. The gaseous products subsequent to the decomposition of the mercaptans on the oxidized metal films also involved other gases, including CO, H2O, and olefins. The pattern of the products formed and their relative concns. at 300-500 K indicated that the extent of mercaptan dissociation decreased in the order S-H, C-S > C-H > C-C. The rate of mercaptan adsorption directly depended on its pressure and the kinetic data revealed the operation of a compensation effect throughout the interaction of the mercaptan with various films. The transition-metal films showed greater activity than Al and Cu, and among the transition metals, Fe exhibited the greatest activity for mercaptan adsorption.

ACCESSION NUMBER: 1988:577435 CAPLUS  
 DOCUMENT NUMBER: 109:177435  
 TITLE: Catalytic decomposition of mercaptans on metal films of iron, nickel, palladium, aluminum and copper  
 AUTHOR(S): Al-Haidary, Yousif Kadim; Saleh, Jalal Mohammed  
 CORPORATE SOURCE: Coll. Sci., Univ. Baghdad, Baghdad, Iraq  
 SOURCE: Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases (1988), 84(9), 3027-41  
 CODEN: JCFTAR; ISSN: 0300-9599  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 295 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Alkylphenols, e.g. p-MeC6H4OH and p-EtC6H4OH (p-I) useful as monomer and intermediates for antioxidants; were prepared by liquid-phase alkylation of phenols with alcs. and/or ethers in the presence of Y-zeolites containing Pd and Ni, Co, Cu, Zn, and/or Ag to improve p-isomer selectivity. Thus, Ni-exchanged Y-zeolite was impregnated with {Pd(NH3)4}Cl2, dried, and calcined. PhOH and MeOH were autoclaved with the above Pd-Ni Y-zeolite under stirring at 250° for 2 h to give a mixture containing PhOH 54.3, o-I 10.5, and p-I 24.8%.

ACCESSION NUMBER: 1988:528565 CAPLUS  
 DOCUMENT NUMBER: 109:128565  
 TITLE: Zeolite-catalyzed selective preparation of p-alkylphenols from phenols and alcohols or ethers  
 INVENTOR(S): Takahashi, Eiichi; Ozaki, Kazuo  
 PATENT ASSIGNEE(S): Maruzen Petrochemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62246532	A2	19871027	JP 1986-87636	19860416
JP 02044820	B4	19901005		
PRIORITY APPLN. INFO.:			JP 1986-87636	19860416

L38 ANSWER 296 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The air electrode properties of Pd and Ni metals deposited on an active C fiber felt (CF-felt) were examined with reference to a Zn electrode. The maximum power, which was evaluated from the elec. power-current curve for a Zn-air cell at 40° in air, increased linearly with the amount of Ni deposit up to 50 mg/g of felt. The maximum power for a Pd-deposited electrode reached a maximum at 18 mg of Pd/g of felt; it remained constant with deposited Pd between 18 and 112 mg/g of felt. The discharge current was measured under a constant terminal voltage at 0.75 V between 20° and 50° with an O partial pressure of 0.2-1 atmospheric. The c.d. depended on temperature. It also varied with the O partial pressure in accordance with the Langmuir relation. The apparent activation energy (Ea), the relative values for the O adsorption equilibrium constant (b) and of the product (k0·a) of the apparent rate constant (k0) and the adsorbed amount for the monolayer (a) for the O activation process on Pd (18 mg) and Ni (50 mg)/g of felt were estimated as follows: Ea = 27 and 24 kJ/mol, b = 3.3 and 3.1 atm-1, k0·a = 83 and 26 mA/cm2, resp. By comparing these kinetic data with the corresponding values for Pt (167 mg/g of felt, 20 kJ/mol, 0.34 atm-1, and 167 mA/cm2), the Pd metal deposited on the CF-felt clearly indicates an excellent catalytic activity in comparison with the Pt deposited, despite the small amount of the deposit (2.4 mg/cm2).  
 ACCESSION NUMBER: 1988:500642 CAPLUS  
 DOCUMENT NUMBER: 109:100642  
 TITLE: Air electrode properties of an active carbon fiber felt with palladium and nickel deposits  
 AUTHOR(S): Kera, Yoshiya; Nakagishi, Tetsuyuki; Miyagawa, Hiroyuki  
 CORPORATE SOURCE: Fac. Sci. Eng., Kinki Univ., Higashiosaka, 577, Japan  
 SOURCE: Nippon Kagaku Kaishi (1988), (5), 714-18  
 CODEN: NKAKB8; ISSN: 0369-4577  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 298 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The adsorption of CO was studied on very thin (submonolayer to multilayer) deposits of Cu, Ni, Pd, and Fe on single crystals of Ru and W. The kinetics of the methanation, ethane hydrogenolysis, and cyclohexane dehydrogenation reactions were also measured over these model bimetallic catalysts. Temperature programmed desorption (TPD) spectra of CO at submonolayer coverages reveal new desorption features which have significantly perturbed peak maximum from those observed on the bulk metals, indicating the unique character of these monolayer metallic films. This behavior is correlated with LEED, ARUPS, work function, and kinetic measurements.  
 ACCESSION NUMBER: 1988:138544 CAPLUS  
 DOCUMENT NUMBER: 108:138544  
 TITLE: Adsorption and reaction on thin metal overlayers  
 AUTHOR(S): Berlowitz, Paul J.; Peden, Charles H. F.; Goodman, D. Wayne  
 CORPORATE SOURCE: Surf. Sci. Div., Sandia Natl. Lab., Albuquerque, NM, 87185, USA  
 SOURCE: Materials Research Society Symposium Proceedings (1987), 83(Phys. Chem. Prop. Thin Met. Overlayers Alloy Surf.), 161-72  
 CODEN: MRSPDH; ISSN: 0272-9172  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 297 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI For diagram(s), see printed CA issue.  
 AB The title compound (I) is prepared by condensation of dihydro-8-formylcamphene (II) with refluxing cyclohexanone in the presence of Zn(OAc)2, azeotropic separation of water, and subsequent reduction by using LiAlH4 or hydrogenation over Raney Ni, Pd/Al2O3, or Pt catalysts. I is characterized by a sandalwood aroma and is suitable for perfumes, soaps, and detergents. A mixture of II, cyclohexanone, and Zn(OAc)2 was refluxed 15-16 h at 438 K and the product was hydrogenated in an autoclave in the presence of Raney Ni at 8 MPa at 390-400 K to give I.  
 ACCESSION NUMBER: 1988:406131 CAPLUS  
 DOCUMENT NUMBER: 109:6131  
 TITLE: Process for preparation of 2-[2-(2,2-dimethyl-2-norbornyl)ethyl]cyclohexanol  
 INVENTOR(S): Gota, Jozef; Gibka, Julia  
 PATENT ASSIGNEE(S): Politechnika Lodzka, Pol.  
 SOURCE: Pol., 2 pp.  
 CODEN: POXXA7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Polish  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 128575	B2	19840229	PL 1982-235534	19820320
PRIORITY APPLN. INFO.:			PL 1982-235534	19820320

L38 ANSWER 299 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A Sn-Pd catalyst for Ni or Cu electroless coating baths is produced by preparing a mixture of Sn(II) halide (SnX2), an alkali metal halide (KCl), and water; reacting the mixture with a PdX2 (PdCl2) at 70-110°; adding a Sn(II) salt of a carboxylic (oxalic) or hydroxy-substituted carboxylic acid (lactic, citric, or tartaric acid) to the reaction mixture, heating the mixture to complete reaction; and by cooling the mixture and recovering the product. The molar ratio of Sn(II) salt to PdX2 is .apprx.(10-50):1, and the catalysts exhibit improved activity and resist decomposition. Thus, a catalyst of the invention (DriCat-3X) containing .apprx.1.75 PdCl2 and .apprx.40% Sn(II) was prepared by mixing KCl, SnCl2, and deionized H2O at .apprx.70°; reacting the mixture with PdCl2 at .apprx. 90-95°; adding Sn(II) tartrate; and by holding and stirring the mixture at .apprx. 95° for 1 h. To demonstrate the superior catalytic activity of DriCat-3X over the catalytic compns. of the prior art, working baths containing a catalyst equivalent of 50 mg PdCl2/L in 3M HCl were prepared and used in an electroless Ni preplate cycle. Standard ABS resin plaques were etched with CrO3-H2SO4, neutralized for any Cr(VI) remaining on the surface, immersed in a DriCat-3X to activate the surface, dipped into 1:1 HCl to accelerate the activated surface, and immersed into an electroless Ni bath. DriCat-3X promoted 100% Ni coverage and the superior activity of DriCat-3X was the result of a modification of the reaction media by the Sn(II) carboxylate.  
 ACCESSION NUMBER: 1988:136250 CAPLUS  
 DOCUMENT NUMBER: 108:136250  
 TITLE: Solid tin-palladium catalyst for electroless deposition containing stannous salts of organic acids  
 INVENTOR(S): Frisby, C. Richard; Page, Billie I.  
 PATENT ASSIGNEE(S): McGean-Rohco, Inc., USA  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4717421	A	19880105	US 1986-857034	19860428
PRIORITY APPLN. INFO.:			US 1986-857034	19860428



L38 ANSWER 300 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The effect was studied of the nature of the electrode (Ni, Cu, Cu-Ni, Pd) and the composition of the BH4--containing solution for Cu-Ni alloy deposition at a rate of BH4- anodic oxidation on the electrode substrate.  
 ACCESSION NUMBER: 1988:102867 CAPLUS  
 DOCUMENT NUMBER: 108:102867  
 TITLE: Anodic oxidation of tetrahydroborate(l-) on different type electrodes  
 AUTHOR(S): Shichkova, T. A.; Sviridov, V. V.; Stepanova, L. I.  
 CORPORATE SOURCE: BGU, Minsk, USSR  
 SOURCE: Vestsi Akademii Navuk BSSR, Seryya Khimichnykh Navuk (1987), (6), 35-9  
 CODEN: VBSKAK; ISSN: 0002-3590  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 301 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A method for converting C3-6 paraffins to aromatic hydrocarbons, (particularly high-octane gasoline) comprises contacting the feedstocks with a zeolite catalyst (containing a 1st metal selected from Cu, Zn, Ga, Cd, Ag, In, Al, Ti, Ti and Zr, and a 2nd metal selected from Pt, Pd, Ni, Ru, Os, Ir, Rh, Fe, Co, La and Ce) at 300-750° and 5120 atmospheric Thus, a hexane feed was contacted with a H-ZSM 5 zeolite catalyst (containing 1 weight % Cu and 1 weight % Pt) at 550°, 1 atm, and 1 h-1 liquid space velocity, resulting in the feed conversion 98%, and aromatic fraction selectivity 70%, compared with 72% and 26%, resp. for the zeolite catalyst containing Cu alone.  
 ACCESSION NUMBER: 1988:97678 CAPLUS  
 DOCUMENT NUMBER: 108:97678  
 TITLE: Light paraffin conversion  
 INVENTOR(S): Nojima, Shigeru; Yokoyama, Shigeo; Iida, Kozo; Daigo, Kanji; Kosaka, Kazuo  
 PATENT ASSIGNEE(S): Technology Research Assoc. for New Application Development for Light-Weight Fractions, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62285987	A2	19871211	JP 1986-127275	19860603

PRIORITY APPLN. INFO.: JP 1986-127275 19860603

L38 ANSWER 302 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB An alkaline catalyst solution contains a water-soluble Pd compound, Sn(II) compound, and a stabilizer based on poly(vinyl alc.) and its derivs. and a monosaccharide and its derivs. The solution pH is adjusted to ≥11 using an alkali metal hydroxide. The solution is used to activate a surface to be coated with Cu, Ni, Pd, Co, Au, or Ag. Substrates attacked by acids are not corroded by the solution, and defect-free electroless coating is obtained. Thus, a glass-epoxy laminate with holes for printed-circuit boards was dipped into the activating solution containing PdCl2, SnCl2, HCl, D-sorbitol, and NaOH.  
 The laminate was then coated with Cu in electroless bath containing CuSO4, EDTA, organic additives, a surfactant, and NaOH for pH of 12.8. Uniform and adherent Cu layer was obtained at 72°.  
 ACCESSION NUMBER: 1988:80364 CAPLUS  
 DOCUMENT NUMBER: 108:80364  
 TITLE: Alkaline catalyst solution for electroless coating  
 INVENTOR(S): Igarashi, Wataru; Yoshii, Toshifumi  
 PATENT ASSIGNEE(S): Nippon Mining Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62235473	A2	19871015	JP 1986-76473	19860404

PRIORITY APPLN. INFO.: JP 1986-76473 19860404

L38 ANSWER 303 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A method includes etching the title moldings in aqueous solns. of alkali metal hydroxides, immersing in Pd hydrosols containing cationic surfactants to impart Pd colloids, and chemical plating. Thus, nonwoven poly(vinylene chloride) fabric was etching in aqueous KOH, immersed in hydrosol prepared from PdCl2, NaCl, stearyltrimethylammonium chloride, and NaBH4, and chemical plated with Ni.  
 ACCESSION NUMBER: 1988:76616 CAPLUS  
 DOCUMENT NUMBER: 108:76616  
 TITLE: Metal plating of poly(vinylidene chloride) moldings  
 INVENTOR(S): Nakao, Yukimichi; Kaeriyama, Kyoji; Suda, Masao; Aoki, Isataka; Matsui, Toshiki; Fujioka, Kazuo; Imai, Tomoyuki  
 PATENT ASSIGNEE(S): Agency of Industrial Sciences and Technology, Japan; Toda Kogyo Corp.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62207876	A2	19870912	JP 1986-52046	19860310
JP 02058355	B4	19901207	JP 1986-52046	19860310

PRIORITY APPLN. INFO.: JP 1986-52046 19860310

L38 ANSWER 304 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The reduction of **catalyst** activity during cracking of Na-contaminated hydrocarbon feedstocks to produce light fractions (especially gasoline) can be minimized by addition of an organic Sn compound, optionally with 21 metal such as **Ni, Pd, Fe, or Cu**, to the fresh feedstock prior to hydrocracking. Thus, a heavy hydrocarbon oil (API 27.9) was cracked over a 1.00 weight% Na-deposited **catalyst** in the presence of 0.50 weight% Sn<sub>2</sub>(Bu)<sub>6</sub> and 1.00 weight% Pd, resulting in the feedstock conversion 36.6 volume% and the selectivity to gasoline 25.8 volume%, compared with 29.8 and 21.5 volume%, resp. in the absence of the additives.

ACCESSION NUMBER: 1988:59248 CAPLUS  
 DOCUMENT NUMBER: 108:59248  
 TITLE: Method for inhibiting the poisoning of fluid cracking **catalysts**  
 PATENT ASSIGNEE(S): Chevron Research Co., USA  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62232485	A2	19871012	JP 1987-65926	19870323
JP 04037114	B4	19920618		
US 4889617	A	19891226	US 1986-843463	19860324
EP 246414	A1	19871125	EP 1987-103858	19870317
EP 246414	B1	19910626		
R: DE, FR, GB				
CA 1287812	A1	19910820	CA 1987-532727	19870323
PRIORITY APPLN. INFO.:			US 1986-843463	19860324

L38 ANSWER 306 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Brewer's intermetallic phases of d-metals cause a dramatic synergetic electrocatalytic effect and exceed the individual polarization properties of the noble metals. The polarization characteristics achieved by in situ use of composite ionic combinations of d-metals (Co-Mo, Ni-Mo, Fe-Mo) represent the highest electrocatalytic effects on cathodic evolution ever obtained.

ACCESSION NUMBER: 1988:45749 CAPLUS  
 DOCUMENT NUMBER: 108:45749  
 TITLE: Synergetic electrocatalytic effects of composite d-metal **catalysts** for the hydrogen evolution reaction on noble metal substrates  
 AUTHOR(S): Kosanovic, B.; Strbac, S.; Ristic, M.; Grozdic, T.; Krstajic, N.; Jaksic, M. M.  
 CORPORATE SOURCE: Metalservis - Inst. Hem. Izvore Struje, Zemun, Yugoslavia  
 SOURCE: Rad. - Jugosl. Simp. Elektrohem., 9th (1985), 30-3.  
 Editor(s): Adzic, Radoslaw; Nikolic, Branislav. Srp. Hem. Druz. Beigrade, Yugoslavia.  
 CODEN: SSUUM  
 DOCUMENT TYPE: Conference  
 LANGUAGE: Serbo-Croatian

L38 ANSWER 305 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Adsorption and decomposition of CH<sub>3</sub>Cl on metal films of **Fe, Ni, Pd, Pb, Au, and Cu** are examined at 193-570 K. Both mcl. Above 300 K the dissociative chemisorption of CH<sub>3</sub>Cl on all the films was accompanied by the evolution of CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, and H<sub>2</sub> together with some C<sub>2</sub>H<sub>4</sub> on Fe, Ni, Pb, and Au. The gaseous products subsequent to CH<sub>3</sub>Cl adsorption on the oxidized films of **Fe, Ni, Pd, Pb, and Cu** above 350 K involved CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, H<sub>2</sub>, and CO gases. The structure of the surface phase was represented as CH<sub>3</sub>Cl and the min. values of the ratio m/n on **Fe, Ni, Pd, Au** and **Cu** were 2.69-2.93, but remained as 2.1 on Pb, indicating the existence of CH<sub>3</sub> and CH<sub>2</sub> radicals on the surface. Further support for the surface species was derived from the results of CH<sub>3</sub>Cl adsorption on Fe and Ni films which had been saturated with deuterium. No HCl, CH<sub>2</sub>O, CH<sub>3</sub>OH, H<sub>2</sub>O, CO<sub>2</sub>, or other gases were observed at any stage, and the adsorption of chlorine atoms, resulting from CH<sub>3</sub>Cl decomposition, on the film surface was accompanied by some incorporation in the bulk of the metal. The kinetic data revealed the direct dependence of the reaction rate on CH<sub>3</sub>Cl pressure and the operation of a compensation effect throughout the interaction of CH<sub>3</sub>Cl with various surfaces. On the basis of such a compensation and the linearity of the relation existing between the activation energies (E<sub>a</sub>) and the preexponential factors of the rate equation, it was possible to arrange the clean and oxidized films in the order of decreasing activity towards CH<sub>3</sub>Cl adsorption and decomposition. An attempt was also made to estimate the enthalpy changes associated with the dissociative adsorption of CH<sub>3</sub>Cl on various surfaces, as well as for the subsequent reactions of the resulting species on the basis of the standard enthalpy involved in the resp. processes.

ACCESSION NUMBER: 1988:55325 CAPLUS  
 DOCUMENT NUMBER: 108:55325  
 TITLE: Adsorption, decomposition and surface reactions of methyl chloride on metal films of iron, **nickel, palladium**, lead, gold and **copper**  
 AUTHOR(S): Ali, Abdul Karim Mohammed; Saleh, Jalal Mohammed; Hikmat, Naema Ahmad  
 CORPORATE SOURCE: Coll. Sci., Univ. Baghdad, Baghdad, Iraq  
 SOURCE: Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases (1987), 83(8), 2391-406  
 CODEN: JCFTAR; ISSN: 0300-9599  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 307 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The concept and practice of the deposition of zero-valent metal on lipid vesicles is described. Both saturated and unsatd. lipid vesicles coordinate to tetrachloropalladate, which could be readily reduced to form catalytic Pd(0). Treatment of these vesicle suspensions with electroless plating solns. of **Pd, Ni, Co, or Cu** produced black colloidal suspensions of the corresponding metals. When the vesicles were composed of saturated lipids, the deposited metal particles (250-2500 Å diameter) appear to be associated with the vesicle surface. The coordination of Pd(II) and the deposition of metal are not qual. affected by the surface charge of the saturated vesicles. In the case of vesicles composed of unsatd. lipids, the activity of the catalytic Pd(0) associated with the unsatd. vesicles indicates that at least part of the Pd is located in the membrane bilayer wall.

ACCESSION NUMBER: 1988:27401 CAPLUS  
 DOCUMENT NUMBER: 108:27401  
 TITLE: Metalization of lipid vesicles via electroless plating  
 AUTHOR(S): Ferrar, W. T.; O'Brien, D. F.; Warshawsky, A.; Voychek, C. L.  
 CORPORATE SOURCE: Corp. Res. Lab., Eastman Kodak Co., Rochester, NY, 14650, USA  
 SOURCE: Journal of the American Chemical Society (1988), 110(1), 288-9  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 308 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB An inorg. substance selected from diamond, Si<sub>3</sub>N<sub>4</sub>, SiC, ZrO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, and MgO is dispersed in a solution containing catalytic metal ion and a reaction aid, light irradiated to precipitate catalyst metal on the surface of the inorg. substance, and then coated with metal. Thus, diamond particles (diameter 3 μ) were precoated with 10-100 Å Pd by reduction-precipitation of PdCl<sub>2</sub> and then coated with 0.1 μ Ni. The Pd precoating increased bonding strength of Ni coating.

ACCESSION NUMBER: 1987:539760 CAPLUS  
 DOCUMENT NUMBER: 107:139760  
 TITLE: Metal coating of inorganic substances by electroless plating  
 INVENTOR(S): Otsuka, Nobuyuki; Adachi, Naosuke; Nakamatsu, Hirohide; Asai, Takeshi; Kawai, Tomoji; Kawai, Nanao; Koreeda, Atsuo  
 PATENT ASSIGNEE(S): Adachi Shin Sangyo K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62133076	A2	19870616	JP 1985-272965	19851203
JP 02049389	B4	19901030		
PRIORITY APPLN. INFO.:			JP 1985-272965	19851203

L38 ANSWER 309 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Pd-Ag and Pd-Ni were prepared on a SiO<sub>2</sub> support with a total metal loading of 2.5 weight%. The catalysts were characterized by temperature-programmed reduction, DSC, and metal surface area measurement. The catalyst activity and selectivity were measured for the hydrogenation of soya bean oil in both stirred and shaken batch reactors at 1 atm H<sub>2</sub> pressure and 100-160°. The characterization techniques provided strong evidence of alloying for both series of catalysts. The activity and selectivity measurements also provided supporting evidence of alloying, and the Pd-Ag system exhibited an activity maximum in the 90-100 atomic% Pd range, while the Pd-Ni system maintained constant activity for alloys containing 0-60 atomic% Ni. trans-Acid formation was suppressed by lower reduction temperature, and linolenate removal was improved at lower temps. Reaction rates were dominated largely by triglyceride diffusion effects.

ACCESSION NUMBER: 1987:496186 CAPLUS  
 DOCUMENT NUMBER: 107:96186  
 TITLE: Silica-supported alloy catalysts for triglyceride hydrogenation: the preparation and properties of palladium-silver and palladium-nickel systems  
 AUTHOR(S): Thomson, Alasdair I.; Winterbottom, John M.  
 CORPORATE SOURCE: Dep. Chem. Eng., Univ. Birmingham, Birmingham, B15 2TT, UK  
 SOURCE: Journal of Chemical Technology and Biotechnology (1987), 37(4), 257-70  
 CODEN: JCTBED; ISSN: 0268-2575  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 310 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title process uses a catalyst containing acidic mordenite with SiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> mol ratio of 9-80 and Na <1 weight% and Zl of Ni, Pd, Cu, Ag, and Au, and Zl of Group IV metals. The Group IV metals in the catalyst may be prepared by introduction of Zl organic complexes. The catalyst may contain a binder selected from clay, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, and SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>. Thus, acidic mordenite was prepared from Zeolon 900 Na (Norton Co.) by ion exchange with NH<sub>4</sub>NO<sub>3</sub> and calcining. Toluene vapor phase disproportionation in the presence of a catalyst containing Na 0.22, Ni 1.81, and Sn 0.43 weight% gave 45% conversion and C1-9 saturated compds. 1.9%, vs. 17.1% C1-9 saturated compds. without Ni and Sn.

ACCESSION NUMBER: 1987:479939 CAPLUS  
 DOCUMENT NUMBER: 107:79939  
 TITLE: Disproportionation and transalkylation of aromatic hydrocarbons with zeolite catalysts  
 INVENTOR(S): Institut Français du Pétrole, Fr.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62051631	A2	19870306	JP 1986-203543	19860828
FR 2586674	A1	19870306	FR 1985-12916	19850828
FR 2586674	B1	19880715		
EP 217695	A1	19870408	EP 1986-401850	19860821
EP 217695	B1	19890208		
R: DE, GB, IT, NL				
US 4723048	A	19880202	US 1986-901333	19860828
PRIORITY APPLN. INFO.:			FR 1985-12916	19850828

L38 ANSWER 311 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Hydrocarbons and alcs. are manufactured by catalytic reaction of low-ratio synthesis gas with water or steam at 200-350° in a slurry reactor over ZnO-supported catalysts impregnated with Co, Ni, Pd, Pt, Ru, Ir, Rh, Cu, or their mixts. Thus, 10 g ZnO was impregnated with Pt, slurried with 100 mL 1:5 (weight ratio) THF-cyclohexane mixture, and placed with 12 mL water into a 500 mL reactor, which was pressurized with 1000 psi 1:1 H-CO, heated to 240°, and stirred at 750 rpm for 5 h. MeOH was a sole product. When Co was substituted for Pt, CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, C<sub>3</sub>H<sub>8</sub>, and higher hydrocarbons were found.

ACCESSION NUMBER: 1987:461868 CAPLUS  
 DOCUMENT NUMBER: 107:61868  
 TITLE: Catalysts for the production of hydrocarbons from carbon monoxide and water  
 INVENTOR(S): Sapienza, Richard S.; Slegel, William A.; Goldberg, Robert I.  
 PATENT ASSIGNEE(S): United States Dept. of Energy, USA  
 SOURCE: Statutory Invent. Regist., 3 pp.  
 CODEN: SRXNEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 243	H1	19870407	US 1985-797509	19851106
US 797509	A0	19870901		
PRIORITY APPLN. INFO.:			US 1985-797509	19851106

L38 ANSWER 312 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process for preparing R1R2C:CR3R8 and R5R6C:CR7R4 (R1, R2, R3, R5, R6, R7 independently = F, Cl, Br, Cl-4 perfluoroalkyl, C6F5; R1R3, R2R3, R5R7, R6R7, when both are cis, = C2-4 perfluoroalkylene, o-CF2C6F4; R8 = F; R4 = Cl, Br; none of the fluoroolefin simultaneously contain both Cl and Br) comprises reacting at 100-400°, 0.001-10 s contact time a perhalooolefin R1R3C:CR3R4 with perchloroolefin R5R6C:CR7R8 in the presence of a solid catalyst selected from (a) Cr oxide alone or in combination with ≥1 of Rh\*, Ir\*, Pd\*, Pt\*, Ag.degree., P2O3, Si oxide, B oxide or an oxide of halide of Al, Mn, Zn, Fe, Rh, Ni, Pd, Co, Pt, Ce, Ag, Cu, Pb, Bi, Ir, Mg, Ba, Sn, La, Ca, Ru, Zr, V, Mo, or W and (b), Al2O3 in combination with (as under a, except no compds. of Al). Equimolar streams of F3CCCl:CCl2 (1), F3CCCF:CF2 (g), and N were passed over Cr2O3 at 350° initially to give F3CCF:CF2 23, F3CCCl:CF2 40, F3CCCl:CClF 26, and F3CCCl:CCl2 3%. The reactor temperature was progressively lowered; at 90° were obtained F3CCF:CF2 16, F3CCCl:CF2 35, F3CCCl:CClF 9, and F3CCCl:CCl2 39%.

ACCESSION NUMBER: 1987:439183 CAPLUS  
 DOCUMENT NUMBER: 107:39183  
 Correction of: 106:119283  
 TITLE: Catalytic fluoroolefin transhalogenations  
 INVENTOR(S): Weigert, Frank Julian  
 PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA  
 SOURCE: Eur. Pat. Appl., 27 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 203807	A1	19861203	EP 1986-304014	19860527
EP 203807	B1	19880928		
R: BE, DE, FR, GB, IT, NL				
JP 62026239	A2	19870204	JP 1986-121395	19860528
US 4814522	A	19890321	US 1988-143203	19880111
PRIORITY APPL. INFO.:			US 1985-738231	19850528
			US 1986-858101	19860506

OTHER SOURCE(S): CASREACT 107:39183

L38 ANSWER 314 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The ultra-high vacuum adsorption-desorption was studied of MeOH on Ni(100), Pd(111), and Ag(111) crystal surfaces as part of the Fischer-Tropsch reaction catalysis. Despite their different electronic structures, all 3 metals bonded MeOH in similar manner. The 7A' and 2A'' Mos of MeOH coupled to the s-p electron states of the metal. The total work function decrease was 1.4-1.6 eV. The heat of MeOH adsorption was approx.45 kJ/mol for all 3 metals. However, thermal desorption was also observed. MeOH was molecularly desorbed at 160-180° from Ag, but CO and H were desorbed from Ni and Pd due to the catalytic thermal dissociation of MeOH.

ACCESSION NUMBER: 1987:83824 CAPLUS  
 DOCUMENT NUMBER: 106:83824  
 TITLE: Interaction of methanol with nickel, palladium and silver single crystal surfaces  
 AUTHOR(S): Christmann, K.; Ruestig, J.  
 CORPORATE SOURCE: Berlin, Fed. Rep. Ger.  
 SOURCE: Int. Congr. Catal., [Proc.], 8th (1985), Meeting Date 1984, Volume 4, IV13-IV24. Verlag Chemie: Weinheim, Fed. Rep. Ger.  
 CODEN: S5DBAG  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

L38 ANSWER 313 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A process for preparing R1R2C:CR3R8 and R5R6C:CR7R4 (R1, R2, R3, R5, R6, R7 independently = F, Cl, Br, Cl-4 perfluoroalkyl, C6F5; R1R3, R2R3, R5R7, R6R7, when both are cis, = C2-4 perfluoroalkylene, o-CF2C6F4; R8 = F; R4 = Cl, Br; none of the fluoroolefin simultaneously contain both Cl and Br) comprises reacting at 100-400°, 0.001-10 s contact time a perhalooolefin R1R3C:CR3R4 with perchloroolefin R5R6C:CR7R8 in the presence of a solid catalyst selected from (a) Cr oxide alone or in combination with ≥1 of Rh\*, Ru\*, Ir\*, Pd\*, Pt\*, Ag.degree., P2O3, Si oxide, B oxide or an oxide or halide of Al, Mn, Zn, Fe, Rh, Ni, Pd, Co, Pt, Ce, Ag, Cu, Pb, Bi, Ir, Mg, Ba, Sn, La, Ca, Ru, Zr, V, Mo, or W and (b), Al2O3 in combination with (as under a), except no compds. of Al). Equimolar streams of F3CCCl:CCl2 (1), F3CCCF:CF2 (g), and N were passed over Cr2O3 at 350° initially to give F3CCF:CF2 23, F2CCCl:CF2 40, F3CCCl:CClF 26, and F3CCCl:CCl2 3%.

The reactor temperature was progressively lowered; at 90° were obtained F3CCF:CF2 16, F3CCCl:CF2 35, F3CCCl:CClF 9, and F3CCCl:CCl2 39%.

ACCESSION NUMBER: 1987:119283 CAPLUS  
 DOCUMENT NUMBER: 106:119283  
 TITLE: Catalytic fluoroolefin transhalogenations  
 INVENTOR(S): Weigert, Frank Julian  
 PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA  
 SOURCE: Eur. Pat. Appl., 27 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 203807 A1		19861203	EP 1986-304014	19860527
R: BE, DE, FR, GB, IT, NL			US 1985-738231	19850528
PRIORITY APPL. INFO.:			US 1986-858101	19860506

L38 ANSWER 315 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The kinetics of selective hydrogenation of edible oils were investigated giving special consideration to geometric isomerization. The reaction was carried out in a stirred semibatch pressure vessel under constant hydrogen pressure and isothermal conditions. Tests with different catalysts such as Ni, Pd, Pt, Rh, Cu chromite showed considerable differences in selectivity and isomerization behavior. The major part of the elaidic acid [7440-05-3] (trans) is formed during the saturation of the linoleic [60-33-3] acid to the monoenoic acid. Kinetic measurements with the system soybean oil/copper chromite showed that the H pressure has the biggest effect on selectivity and isomer distribution. All observed phenomena of the hydrogenation system could be described using a modified Langmuir-Hinshelwood type model. Using this model, observed conversion curves for different oils like rape, olive, soybean, sunflower seed and thistle oil could be simulated with good accuracy.

ACCESSION NUMBER: 1987:17183 CAPLUS  
 DOCUMENT NUMBER: 106:17183  
 TITLE: Kinetics of edible oil hydrogenation and comparison of different catalysts  
 AUTHOR(S): Muenzing, M.; Kut, O. M.; Gut, G.  
 CORPORATE SOURCE: Tech. Chem. Lab., Eidg. Tech. Hochschule, Zurich, CH-8092, Switz.  
 SOURCE: Fette, Seifen, Anstrichmittel (1986), 88(10), 387-91  
 CODEN: FSASAX; ISSN: 0015-038X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

L38 ANSWER 316 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Binary systems of Au with Pt, Ni, Pd, Rh, Cu, Ag, and Cd on CaF<sub>2</sub>, BaF<sub>3</sub>, and AlF<sub>3</sub> were studied in the dehydrogenation of isopropanol to acetone; dehydration to isopropyl ether also occurred. Pt-Au and Ni-Au on CaF<sub>2</sub>, Ni-Au and Cu-Au on BaF<sub>2</sub>, and Cu-Au on AlF<sub>3</sub> increased the degree of dehydrogenation.  
 ACCESSION NUMBER: 1986:625737 CAPLUS  
 DOCUMENT NUMBER: 105:225737  
 TITLE: Catalytic properties of gold-metal/metal fluoride systems  
 AUTHOR(S): Kazakova, G. D.; Shlyakhova, M. A.; Kicheeva, Z. N.; Erofeev, B. V.  
 CORPORATE SOURCE: Pedagog. Inst., Moscow, USSR  
 SOURCE: Vestsi Akademii Navuk BSSR, Seryya Khimichnykh Navuk (1986), (1), 44-6  
 CODEN: VBSKAK; ISSN: 0002-3590  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 317 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The preparation of H<sub>2</sub> via the catalyst-assisted decomposition of water was investigated under mild conditions for the reaction Zn + H<sub>2</sub>O → ZnO + H<sub>2</sub>. The H<sub>2</sub> yields were determined for reaction temps. of 303, 333, and 353 K at various time intervals. The extent of reaction completion varied from a few percent to approx. 95%. The catalyst systems investigated consisted of Ag, Au, Fe, Ni, Pd, Rh, and Ru. Metals electrochem. dispersed on the Zn surface. Except for Ag and Ni, addition of the other metals to Zn enhanced the production of H<sub>2</sub>. The order of promoting effect was Rh > Pt > Ru > Pd > Au > Fe > no catalyst > Ni > Ag. Kinetic data obtained closely fit a homogeneous sphere topochem. reaction model.  
 ACCESSION NUMBER: 1986:575176 CAPLUS  
 DOCUMENT NUMBER: 105:175176  
 TITLE: Catalytic water decomposition via novel bimetallic systems  
 AUTHOR(S): Jeong, K. M.; Swift, H. E.  
 CORPORATE SOURCE: Avco Res. Lab., Inc., Everett, MA, 02149, USA  
 SOURCE: Journal of Catalysis (1986), 101(2), 246-52  
 CODEN: JCTLA5; ISSN: 0021-9517  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 318 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A catalytically active vitrified metal is described from 21 element of Group IVB, especially Zr or Ti, and 21 element of Group IB, especially Cu, or VB, especially V, or VIII, especially Co, Ni, Pd, and Fe, self-activated or activated through an oxidative and/or reductive treatment for use as catalyst, especially for hydrogenation, oxidation, or isomerization. Examples illustrate the use of these catalysts in the synthesis of NH<sub>3</sub>, hydrogenation of ethylene, oxidation of toluene, hydrogenation of 1,3-butadiene, and selective hydrogenation of butadiene. Typical glassy metals are Fe<sub>91</sub>Zr<sub>9</sub>, Fe<sub>91</sub>Ti<sub>9</sub>, (Fe<sub>9</sub>Zr<sub>9</sub>)<sub>95</sub>Mo<sub>5</sub>, (Fe<sub>91</sub>Ti<sub>9</sub>)<sub>95</sub>Mo<sub>5</sub>, Fe<sub>24</sub>Zr<sub>76</sub>, Fe<sub>24</sub>Ti<sub>76</sub>, Ni<sub>24</sub>Zr<sub>76</sub>, Ni<sub>24</sub>Ti<sub>76</sub>, Ni<sub>64</sub>Ti<sub>36</sub>, Cu<sub>70</sub>Zr<sub>30</sub>, Cu<sub>70</sub>Ti<sub>30</sub>, V<sub>36</sub>Zr<sub>64</sub>, and V<sub>36</sub>Ti<sub>64</sub>.  
 ACCESSION NUMBER: 1986:503445 CAPLUS  
 DOCUMENT NUMBER: 105:103445  
 TITLE: Catalytically active vitrified metals  
 INVENTOR(S): Franzen, Volker; Guentherodt, Hans Joachim; Baiker, Alphons; Armbruster, Erich; Baris, Halim  
 PATENT ASSIGNEE(S): Lonza A.-G., Switz.  
 SOURCE: Eur. Pat. Appl., 17 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

L38 ANSWER 318 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 173088	A2	19860305	EP 1985-109442	19850726
EP 173088	A3	19880107		
EP 173088	B1	19920429		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
CH 660130	A	19870331	CH 1984-3679	19840727
JP 61035852	A2	19860220	JP 1985-162794	19850723
DD 239347	A5	19860924	DD 1985-278876	19850723
CA 1262718	A1	19891107	CA 1985-487421	19850724
US 4735789	A	19880405	US 1985-758829	19850725
NO 8502979	A	19860128	NO 1985-2979	19850726
DK 8503410	A	19860128	DK 1985-3410	19850726
SU 1402246	A3	19880607	SU 1985-3932555	19850726
AT 75420	E	19920515	AT 1985-109442	19850726
US 4727202	A	19880223	US 1987-51183	19870518
US 4939296	A	19900703	US 1989-338401	19890414
CA 1292977	A2	19911210	CA 1989-601832	19890605
PRIORITY APPLN. INFO.:				
			CH 1984-3679	19840727
			CA 1985-487421	19850724
			US 1985-758829	19850725
			EP 1985-109442	19850726
			US 1986-833237	19860227
			US 1986-833239	19860227
			US 1987-51183	19870518
			US 1987-80198	19870731

L38 ANSWER 319 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The skeletal rearrangement reactions of butane, 2-methylpropane, and 2,2-dimethylpropane were investigated over Al<sub>2</sub>O<sub>3</sub>- and SiO<sub>2</sub>-supported Pd, Pt, Ni, and Ag-Ni catalysts. As opposed to Pt, isomerization over the other catalysts proceeds mainly by carbene intermediates by a so-called external C1-migration pathway. This reaction is parallel with homologation. Hydrogen sensitivities and radiotracer studies confirm these suggestions.

ACCESSION NUMBER: 1986:496802 CAPLUS  
 DOCUMENT NUMBER: 105:96802  
 TITLE: Mechanism of the bond-shift skeletal isomerization of alkanes over palladium, nickel, and nickel-silver catalysts: evidence for participation of intermediate carbenes Sarkany, A.  
 AUTHOR(S):  
 CORPORATE SOURCE: Inst. Isot., Hung. Acad. Sci., Budapest, H-1525, Hung.  
 SOURCE: Journal of Catalysis (1986), 97(2), 407-15  
 CODEN: JCTLAS; ISSN: 0021-9517  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 320 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Amorphous eutectic alloys are used for producing parts having high surface to volume ratio. The alloys are produced by quenching at >10<sup>5</sup>/s. Optionally, the alloy layer is formed by electrodeposition. The alloys are heat treated below the crystallization and spinodal decomposition temps. so that the phase separation occurs without nucleation and crystal growth. Then one phase is removed (e.g., by leaching). The alloys are especially suitable for manufacture of filtering and osmosis membranes, and catalysts. Thus, an amorphous Ag-37Al alloy ribbon was prepared and held at room temperature for 4 days to achieve phase separation. A membrane was prepared by leaching out Ag by using concentrated HNO<sub>3</sub>. According to electron microscopy, size of Al-rich solid solution phase lamellas and interspaces were .apprx.0.1 μ thick.

ACCESSION NUMBER: 1986:428404 CAPLUS  
 DOCUMENT NUMBER: 105:28404  
 TITLE: Amorphous alloys with high surface area Scruggs, David Milton; Croopnick, Gerald Allan  
 INVENTOR(S): Dresser Industries, Inc., USA  
 PATENT ASSIGNEE(S): Ger. Offen., 29 pp.  
 SOURCE: CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3530957	A1	19860320	DE 1985-3530957	19850827
US 4608319	A	19860826	US 1984-649070	19840910
GB 2164356	A1	19860319	GB 1985-21635	19850830
GB 2164356	B2	19880817		
CA 1246900	A1	19881220	CA 1985-489772	19850830
JP 61067762	A2	19860407	JP 1985-200418	19850910
PRIORITY APPL. INFO.:			US 1984-649070	19840910

L38 ANSWER 321 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Biomass is converted directly into liquid fuels by placing a 10-30% aqueous slurry of a biomass (organic waste, agricultural residue, urban refuse, and plant material; particle size .apprx.0.350 mm) in contact with a zeolite-based catalyst at 280-350° and 1000-3000 psi in an inert or reducing atmosphere for 2-5 min. Thus, a zeolite (HY, ZSM5, or H mordenite) deposited with 1-10% metal (Fe, Ni, Pd, Pt, Co, Mo, Cr, Ti, Cu, Ru, or Zn) supported on Al<sub>2</sub>O<sub>3</sub>, asbestos, or synthetic SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> (surface area >0.5 m<sup>2</sup>/g) was used as the catalyst. An aqueous slurry heated at 70° was injected into a high-pressure reactor heated at 400-450° and containing the catalyst in a rotating basket and flushed with N<sub>2</sub>. The product was cooled in a water-cooled vessel and the product oil was extracted by CH<sub>2</sub>Cl<sub>2</sub>. The water layer was reused for mixing the biomass. Solid tar formed in the catalyst basket was removed by steam injection.

ACCESSION NUMBER: 1986:189730 CAPLUS  
 DOCUMENT NUMBER: 104:189730  
 TITLE: Converting biomass into hydrocarbons  
 INVENTOR(S): Dao, Le H.  
 PATENT ASSIGNEE(S): Institut National de la Recherche Scientifique, Can.  
 SOURCE: Can., 10 pp.  
 CODEN: CAXXA4  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 1201080	A1	19860225	CA 1983-443162	19831213
PRIORITY APPL. INFO.:			CA 1983-443162	19831213

L38 ANSWER 322 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB H electrode reactions (HER) on thin-layer electrodes of Group-IB and VIII metals (Cu, Ag, Au, Ni, and Pt) prepared by electrodeposition on Pd foil substrates were studied (together with the Pd foil itself) in 0.5M H<sub>2</sub>SO<sub>4</sub> and 1.0M NaOH at 303 K by a transient technique. The reactions on these metals were concluded to proceed via a Volmer-Tafel reaction route and the exchange current densities of the elementary steps, i<sub>ov</sub> and i<sub>oT</sub>, were then evaluated. The electrocatalytic activities towards the Volmer step were observed to be in the order Pt > Au > Ag > Cu in an acidic solution and Pt > Pd > Ni > Ag > Au > Cu in an alkaline solution. The activities towards the Tafel step were Pt > Au > Cu > Ag > Ni in an acidic solution and Pd > Pt > Au > Cu = Ag > Ni in an alkaline solution. The results were summarized in terms of the parameter m<sub>0</sub> (=i<sub>ov</sub>/i<sub>oT</sub>). This parameter was used to describe the electrochem. of the energy efficiency of a hydride-type H-storage electrode, when the metals were employed for the purpose of modifying the electrode surface. Pt and Ag (among the Group-IB metals) in both acidic and alkaline solns. with revealed to be suitable electrocatalysts.

ACCESSION NUMBER: 1986:157980 CAPLUS  
 DOCUMENT NUMBER: 104:157980  
 TITLE: Electrocatalysis in metal hydride electrodes. I. Hydrogen electrode reaction on Group-IB and -VIII metals deposited on palladium substrates  
 AUTHOR(S): Machida, Kenichi; Enyo, Michio  
 CORPORATE SOURCE: Res. Inst. Catal., Hokkaido Univ., Sapporo, 060, Japan  
 SOURCE: Bulletin of the Chemical Society of Japan (1986), 59(3), 725-31  
 CODEN: BCSJAS; ISSN: 0009-2673  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 323 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The electromagnetic intensity is greatly enhanced at the surface of small  
 Ag particles and is less enhanced for larger Ag particles. Electrodynamic results show that the enhancement for other large metal particles (Au, Pt, Ni, Pd, Rh, and Ir) can be comparable with that for large Ag particles. Specifically, the calculated enhancement for Ag and Au prolate spheroids with a:b = 2 confirms earlier exptl. results that show similar enhancements in spite of large differences in the  $\text{Im } \epsilon(\omega)$ . Results for catalytic metals in air and water show that significant enhancements can exist. These electrodynamic results indicate that surface-enhanced Raman scattering should be an effective approach for in situ monitoring of catalytic reactions at the surface of appropriately shaped metallic particles.

ACCESSION NUMBER: 1986:118872 CAPLUS  
 DOCUMENT NUMBER: 104:118872  
 TITLE: Surface-enhanced electric intensities on transition- and noble-metal spheroids  
 AUTHOR(S): Cline, M. P.; Barber, P. W.; Chang, R. K.  
 CORPORATE SOURCE: Dep. Electr. Comp. Eng., Clarkson Univ., Potsdam, NY, 13676, USA  
 SOURCE: Journal of the Optical Society of America B: Optical Physics (1986), 3(1), 15-21  
 CODEN: JOBPDE; ISSN: 0740-3224  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 324 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 17 refs. The catalytic activation of Group VIII (Ni, Pd, Rh)-Sn alloys are compared with those of Ni-Cu and Pd-Ag alloys, with emphasis on the gas-solid heterogeneous catalytic hydrogenation of hydrocarbons.

ACCESSION NUMBER: 1986:75803 CAPLUS  
 DOCUMENT NUMBER: 104:75803  
 TITLE: Catalytic activity of alloys  
 AUTHOR(S): Masai, Mitsuo  
 CORPORATE SOURCE: Dep. Chem. Eng., Kobe Univ., Kobe, 657, Japan  
 SOURCE: Koon Gakkaishi (1985), 11(S), 157-64  
 CODEN: KGAOKD; ISSN: 0387-1096  
 DOCUMENT TYPE: Journal: General Review  
 LANGUAGE: Japanese

L38 ANSWER 325 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The quantum yields  $\phi(1/2\text{H}_2)$  of H production were optimized as a function of the pH and the concns. of the components of the Ru(bpy)<sub>3</sub>2+ (bpy = 2,2'-bipyridine) [15158-62-0]/methylviologen (MV2+) [1910-42-5]/EDTA [60-00-4]/colloidal Pt model system irradiated at 453 nm. An optimum quantum yield  $\phi(1/2\text{H}_2)$  of 0.171  $\pm$  0.020 was found for the following optimized parameters: pH 5 and [Ru(bpy)<sub>3</sub>2+] 5.65  $\times$  10<sup>-5</sup>, [MV2+] 3  $\times$  10<sup>-3</sup> [EDTA] 0.1, and concentration of chemical prepared colloidal Pt 1.92  $\times$  10<sup>-5</sup>M. The quantum yields of the MV radical cation were determined under the same conditions, but without Pt, and an optimum value  $\phi(1/2\text{H}_2)$  (MV radical cation) = 0.181  $\pm$  0.02 was obtained. The H and MV radical cation yields are thus closely related throughout the MV2+ concentration range investigated, which supports the fact that colloidal Pt is operating with an efficiency of approx.100%. Various types of heterogeneous catalysts (radiolytically prepared colloidal metals, metal deposited on semiconductor powders, metal and metal oxide powders) were tested and compared under optimized exptl. conditions. The relative catalytic efficiency of metal hydrosols for H production was Ir, Pt, Os > Ru > Rh > Co, Ni, Pd, Ag, Au, > Cu, Cd, Pb. The highest  $\phi(1/2\text{H}_2)$  was observed for colloidal Ir ( $\phi(1/2\text{H}_2)$ ) = 0.17  $\pm$  0.020. Pt-TiO<sub>2</sub> was the most efficient of the supported metals ( $\phi(1/2\text{H}_2)$ ) = 0.160  $\pm$  0.020;  $\phi(1/2\text{H}_2)$  is  $\phi(1/2\text{H}_2)$  uncorrected for light-scattering effects). H production from water was studied as a function of the Ni content (0.5 - 13.8 weight%) for Ni-TiO<sub>2</sub> and an optimum yield  $\phi(1/2\text{H}_2)$  = 0.108  $\pm$  0.02 was found for a Ni content of approx.5 weight%. RuO<sub>2</sub> and IrO<sub>2</sub> codeposited on zeolite gave the highest yields of the metal oxides ( $\phi(1/2\text{H}_2)$ ) = 0.102  $\pm$  0.02). The efficiencies of low-cost catalysts such as Ni powder, TiO<sub>2</sub>, Fe<sub>2</sub>O<sub>3</sub>, Sn<sub>2</sub>O<sub>3</sub>, CeO<sub>2</sub>, MnO<sub>2</sub>, and ZnO were also examined

ACCESSION NUMBER: 1985:563374 CAPLUS  
 DOCUMENT NUMBER: 103:163374  
 TITLE: Photochemical production of hydrogen from water  
 AUTHOR(S): Amouyal, Edmond; Koffi, Philippe  
 CORPORATE SOURCE: Lab. Phys.-Chim. Rayonnem., Univ. Paris-Sud, Orsay, 91405, Fr.  
 SOURCE: Journal of Photochemistry (1985), 29(1-2), 227-42  
 CODEN: JPCMAE; ISSN: 0047-2670  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 326 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The effectiveness of catalytic wet-oxidation in treating scrub water from a moving bed coal gasifier was investigated using catalysts containing Ni, Pd, Pt, Cu, Fe, or Ag at 175-250°, 58.4 MPa, and residence times of 0.5-10.0 min. Total C conversion of 90% at 10 min was achieved using a Cu catalyst. A 3-step reaction model was developed; apparent reaction rates and activation energies for each step were estimated with 1st order kinetics.

ACCESSION NUMBER: 1985:492388 CAPLUS  
 DOCUMENT NUMBER: 103:92388  
 TITLE: A study of the effectiveness of catalytic wet-oxidation of coal gasifier wastewater  
 AUTHOR(S): Hahn, O. J.; Chowdhury, A. K. M.; McLeod, J. M.  
 CORPORATE SOURCE: Dep. Mech. Eng., Univ. Kentucky, Lexington, KY, USA  
 SOURCE: Ind. Pollut. Control Symp. (1985), 1-9. Editor(s): Peterson, G. P.; Lau, S. C. ASME: New York, N. Y.  
 CODEN: 53YTPAP  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

L38 ANSWER 327 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The anodic oxidation of HCHO and N2H4 on Au, Pt, Pd, **Ag**, **Cu**, **Ni**, and Co electrodes was studied in solns. of di-Na salt of EDTA and the catalytic activity of metals was estimated. The polarization curves obtained showed the Tafel line and the current maximum or otherwise the limiting current. These curves were not affected by the agitation of solns. The anodic current of the ascending portion of the polarization curves increased with increase of the pH value and the concentration of the reductants. The reaction order with respect to OH- and reductant was .apprx.0.3 and 0.5, resp. The relative catalytic activity of the metals, evaluated by the potential values at a c.d. of 1.0 + 10-4 A/cm2, decreased in the order: **Cu**, **Au**, **Ag**, **Pt**, **Pd**, **Ni**, and **Co** for HCHO; and were **Co**, **Ni**, **Pt**, **Pd**, **Cu**, **Ag**, and **Au** for N2H4. A relation between the catalytic activity and the apparent activation energy of the anodic oxidation of the reductants was found.

ACCESSION NUMBER: 1985:444731 CAPLUS  
 DOCUMENT NUMBER: 103:44731  
 TITLE: Catalytic activity of metals in the anodic oxidation of formaldehyde and hydrazine in electroless plating  
 AUTHOR(S): Ohno, Izumi; Wakabayashi, Osamu; Hanayama, Shiro  
 CORPORATE SOURCE: Grad. Sch., Tokyo Inst. Tech., Yokohama, 227, Japan  
 SOURCE: Denki Kagaku oyobi Kogyo Butsuri Kagaku (1985), 53(3), 190-5  
 CODEN: DKOKAZ; ISSN: 0366-9297  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 329 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A review with 62 refs. is given on SCF-Xu-(scattered wave [SW])-MO studies of the electronic structures, chemical bonding, and related (e.g., catalytic, magnetic, and superconducting) properties of metal and alloy clusters. The topics discussed include: **Li**, **Cu**, **Ni**, **Pd**, and **Pt** clusters; relativistic contributions to cluster electronic structure; the interaction of atomic H with **Ni**, **Pd**, and **Pt** clusters; metal-support (Pt-SiO2 and Ru-SiO2) interactions; magnetism of Fe clusters; cluster models of transition-metal impurities and their magnetic properties in **copper** and aluminum hosts; cluster models of intermetallic compds., solid-solution alloys, and amorphous alloys; and cluster-MO models of superconductors.

ACCESSION NUMBER: 1985:154908 CAPLUS  
 DOCUMENT NUMBER: 102:154908  
 TITLE: SCF-Xu-SW cluster molecular-orbital models of **catalysts**, alloys, magnetic materials, and superconductors  
 AUTHOR(S): Johnson, K. H.  
 CORPORATE SOURCE: Dep. Mater. Sci. Eng., Massachusetts Inst. Technol., Cambridge, MA, 02139, USA  
 SOURCE: Local Density Approximations Quantum Chem. Solid Phys., [Proc. Symp.] (1984), Meeting Date 1982, 487-514. Editor(s): Dahl, Jens Peder; Avery, John. Plenum: New York, N. Y.  
 CODEN: 53JVAO  
 DOCUMENT TYPE: Conference; General Review  
 LANGUAGE: English

L38 ANSWER 328 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Lubricating oil bright stock b. >850°F was 1st dewaxed and then hydrotreated over zeolite **catalysts** to decrease its pour point and enhance its quality. Suitable **catalysts** in the catalytic dewaxing step were ZSM-5 zeolites containing 0.05-5% **Ni**, **Pd**, or **Pt**. The hydrotreating step was conducted over ZSM zeolites containing rare earth elements, Mn, **Cu**, or Group VIII or IIB elements (e.g., **Zn**, **Ni**, **Pt**, **Pd**) at 425-600°F, 150-1500 psia, and 0.1-4 h-1 space velocity.

ACCESSION NUMBER: 1985:169538 CAPLUS  
 DOCUMENT NUMBER: 102:169538  
 TITLE: Two-stage hydrocarbon dewaxing-hydrotreating process  
 INVENTOR(S): Oleck, Stephen M.; Wilson, Robert C., Jr.  
 PATENT ASSIGNEE(S): Mobil Oil Corp., USA  
 SOURCE: U.S., 6 pp. Cont.-in-part of U.S. 4,437,976.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4490242	A	19841225	US 1984-579317	19840113
US 4437976	A	19840320	US 1982-417765	19820913
			US 1981-290759	19810807
PRIORITY APPLN. INFO.:			US 1982-417765	19820913

L38 ANSWER 330 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB H2S and CO are reacted in the presence of a **catalyst** which is an intercalate MaC100-a, where M is a metal **Co**, **Fe**, **Ni**, **Pd**, **Cu**, **Mo**, **W**, **V**, **Nb**, **Ta**, **Ru**, **Os**, **Rh**, **Ir**, and/or **Ti**, **C** is graphite, and a is the weight percentage of M. Thus, **Co** and **H2S** at a 1:1 mol ratio were passed at 400° and residence time 10 s over a bed of graphite intercalated with 1% **Pd**. The **H2S** conversion was 21.2%. When only graphite was used none of the **H2S** was converted.

ACCESSION NUMBER: 1985:97751 CAPLUS  
 DOCUMENT NUMBER: 102:97751  
 TITLE: Hydrogen and carbonyl sulfide produced from hydrogen sulfide and carbon monoxide using a metal intercalate of graphite as a **catalyst**  
 INVENTOR(S): McGuiggan, Michael F.; Kuch, Philip L.  
 PATENT ASSIGNEE(S): Standard Oil Co., USA  
 SOURCE: U.S., 4 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4496530	A	19850129	US 1982-448581	19821210
PRIORITY APPLN. INFO.:			US 1982-448581	19821210



L38 ANSWER 331 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Complexes containing PRR1R2[R = F, substituted alkynyl; R1,R2 = F, (un)substituted alkynyl, alkyl, aryl, alkoxyalkyl, aryloxyalkyl, alkoxyaryl, aryloxyaryl, ferrocenyl], CO, and a transition metal selected from Cr, Mo, W, Mn, Re, Fe, Ru, Os, Ni, Pd, Pt, Cu, Ag, Au and their mixts., were prepared and used as catalysts for hydroformylation, dehydrogenation, hydrogenation, and water gas shift reactions. Thus, L2PtCl2 [L = {P(C.tplbond.CP\*Et2Me)3}[MeSO3-]3] catalyzed reduction of cyclohexene to cyclohexane at 120°, using H2O and CO. IR spectroscopy indicated a Pt-CO bond had formed, and the C.tplbond.C bonds were intact.

ACCESSION NUMBER: 1985:46145 CAPLUS  
 DOCUMENT NUMBER: 102:46145  
 TITLE: Phosphine and phosphonium compounds and catalysts  
 INVENTOR(S): Mitchell, Howard L., III  
 PATENT ASSIGNEE(S): Exxon Research and Engineering Co., USA  
 SOURCE: U.S., 18 pp. Division of U.S. Ser. No. 120,937.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4473505	A	19840925	US 1982-423641	19820927
PRIORITY APPLN. INFO.:			US 1980-120937	19800212

L38 ANSWER 332 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The catalytic activity of 3 types of metal catalysts were evaluated for removal of O2 from H2 by H oxidns.: (1) γ-Al2O3 (4-6 mm particle size) impregnated with Pd using 5 g PdCl2/L solution; (2) vacuum-evaporated Pd over a Cr layer on a high-porosity bronze filter prepared by powder metallurgy; and (3) a pseudodiffusion membrane prepared by pressing Pd-containing powder (Pd 85 + Co 15%) onto a pressed electrolytic-Cu substrate sintered at 1123 K in N2+H2 or H2 atmospheric of the 3 catalysts, the membrane catalyst eliminated the O to the greatest degree (from approx. 2 + 10-3 volume% O2 to (0.15-0.30) + 10-4 volume% at 20° and space velocities of (6-11) + 104 h-1). The other 2 catalysts were also highly efficient but the space velocities were several times lower than for the membrane catalyst.

ACCESSION NUMBER: 1984:558422 CAPLUS  
 DOCUMENT NUMBER: 101:158422  
 TITLE: Catalytic purification of hydrogen  
 AUTHOR(S): Zlatkov, P.; Kilsurski, D.; Georgiev, V.; Chimbulev, M.; Petrov, S.  
 CORPORATE SOURCE: Min. Mach. Construct. Electron., Sofia, 1000, Bulg.  
 SOURCE: Izvestiya po Khimiya (1983), 16(1-2), 107-13  
 CODEN: IZKHDX; ISSN: 0324-0401  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Bulgarian

L38 ANSWER 333 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Reactions of CH2Cl2 [75-09-2] and CHCl3 [67-66-3] were studied in mixts. with H alone, or with H and CO, on metals with varying activities and selectivities in the Fischer-Tropsch synthesis (Ni, Co, Cu, Fe, Rh, Pd) and on some alloys (Ni-Cu and Ni-Pd). Metals active in the Fischer-Tropsch synthesis produced higher hydrocarbons both in the absence and presence of CO. This confirms the idea that O-free intermediates (-CHy-) lead to the formation of hydrocarbon chains; the surface concentration of these species is essential for the selectivity.

ACCESSION NUMBER: 1984:513514 CAPLUS  
 DOCUMENT NUMBER: 101:113514  
 TITLE: Reactions of chlorinated methane (CHxCl4-x) with hydrogen: relation to the Fischer-Tropsch synthesis of hydrocarbons  
 AUTHOR(S): Van Bameveld, W. A. A.; Poncet, V.  
 CORPORATE SOURCE: Gorlaeus Lab., State Univ. Leiden, Leiden, 2300 RA, Neth.  
 SOURCE: Journal of Catalysis (1984), 88(2), 382-7  
 CODEN: JCTLA5; ISSN: 0021-9517  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 334 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Perfluoroalkyl iodides RI [R = (CF2)nCF3, CF(CF3)2; n = 0, 1, 3, 5, 7] reacted with aldehydes R1CHO (R1 = Ph, CH:CHPh, CH2CHMeCH2CH2CH:CMc2, hexyl, pentyl) using Zn and catalytic (Ph3P)2NiCl2 (M = Ni, Pd) to give 15-82% fluorinated alcs. RCHRIOH at room temperature. The much cheaper F3CCBr reacted similarly with aldehydes, using Zn and catalytic (Ph3P)2NiCl2 at room temperature to give 6-51% alcs. such as F3CCCH(OH)C6H4Cl-4.

ACCESSION NUMBER: 1984:472351 CAPLUS  
 DOCUMENT NUMBER: 101:72351  
 TITLE: Palladium- and nickel-catalyzed perfluoroalkylation of aldehydes using zinc and perfluoroalkyl halides  
 AUTHOR(S): O'Reilly, Neil J.; Maruta, Masamichi; Ishikawa, Nobuo  
 CORPORATE SOURCE: Dep. Chem. Technol., Tokyo Inst. Technol., Tokyo, 152, Japan  
 SOURCE: Chemistry Letters (1984), (4), 517-20  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 335 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Pd, Pt, Ru, Cu-Ni-Co, Ca Ni phosphate, Fe-Cr-K, and Ni catalysts with or without various supports were tested in the title reaction. The most active and selective for pyrocatechol were Pd/C and Ni/kieselguhr.  
 ACCESSION NUMBER: 1984:438186 CAPLUS  
 DOCUMENT NUMBER: 101:38186  
 TITLE: Dehydrogenation of trans-cyclohexane-1,2-diol to pyrocatechol on metal-containing catalysts.  
 I. Selection of catalytic composition  
 D'yakonov, A. Yu.; Stytsenko, V. D.; Nizova, S. A.; Belov, V. S.; Rozovskii, A. Ya.  
 CORPORATE SOURCE: Inst. Neftekhim. Sint. im. Topchieva, Moscow, USSR  
 SOURCE: Kinetika i Kataliz (1984), 25(2), 469-92  
 CODEN: KNKTA4; ISSN: 0453-8811  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 336 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Stillbene and CH<sub>2</sub>:CH<sub>2</sub> were contacted at reverse disproportionation conditions with an activated catalyst containing Co, W, and an alkali or alkaline earth component or compds. thereof, supported on a carrier, to give styrene. A basic catalyst contained 0.56 weight-% WO<sub>3</sub> and 0.038 weight-% K<sub>2</sub>O on silica gel; this was activated with CO at 450° for, e.g., 1 h, and H<sub>2</sub>C:CH<sub>2</sub>-stilbene fed, with residence time 0.3 s, to give styrene, 27.65 mol/L catalyst initially and 19.43 after 4.5 h. Catalysts containing oxides of Pt, Pd, Ni, Zn, Cr, Fe, Ru, Mo, V, Sn, Re, Ag, Ce, Eu, As, U, Mn, Rh, or Co were also prepared and tested. Productivities were given.  
 ACCESSION NUMBER: 1984:209352 CAPLUS  
 DOCUMENT NUMBER: 100:209352  
 TITLE: Catalyst for reverse disproportionation  
 INVENTOR(S): Hobbs, Charles F.  
 PATENT ASSIGNEE(S): Monsanto Co., USA  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4440967	A	19840403	US 1982-402874	19820729
PRIORITY APPLN. INFO.:			US 1982-402874	19820729

L38 ANSWER 337 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The reaction of diketene (I) with benzyl Grignard reagents RC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>MgX (R = H, o-, p-MeO, p, m-Me; X = Cl, Br) in the presence of NiCl<sub>2</sub> gave 34-70% H<sub>2</sub>C:CRCH<sub>2</sub>CO<sub>2</sub>H. In the presence of NiCl<sub>2</sub>(Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>3</sub>Ph)<sub>2</sub>, primary alkylmagnesium bromides R<sub>1</sub>MgBr (R<sub>1</sub> = Bu, Pr, Et) reacted with I to give 43-51% H<sub>2</sub>C:CR<sub>1</sub>CH<sub>2</sub>CO<sub>2</sub>H. Treating I with (E)-R<sub>2</sub>CH:CH<sub>1</sub>(CH<sub>2</sub>CHMe<sub>2</sub>)<sub>2</sub> in the presence of Pd(0) catalyst gave 51-54% (E)-R<sub>2</sub>CH:CHC(:CH<sub>2</sub>)CH<sub>2</sub>CO<sub>2</sub>H.  
 ACCESSION NUMBER: 1984:209133 CAPLUS  
 DOCUMENT NUMBER: 100:209133  
 TITLE: Studies on ketene and its derivatives. CXVIII. Nickel- or palladium-catalyzed reaction of diketene with organometallics. Synthesis of 3-substituted 3-butenic acids  
 AUTHOR(S): Abe, Yoshihito; Sato, Masayuki; Goto, Hiroyuki; Sugawara, Rie; Takahashi, Eri; Kato, Tetsuzo  
 CORPORATE SOURCE: Pharm. Inst., Tohoku Univ., Sendai, 980, Japan  
 SOURCE: Chemical & Pharmaceutical Bulletin (1983), 31(12), 4346-54  
 CODEN: CPBTAL; ISSN: 0009-2363  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 100:209133

L38 ANSWER 338 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Organic Si compds. having no O or halogen atoms attached directly to the Si and at least 1 H attached to the Si are decomposed by pyrolysis to form SiC.  
 The whiskers are formed at 700-1450° on powders of metals (particle size <5 μ) from Groups IB (Cu and Ag), VB (V, Nb, and Ta), and VIII (Fe, Co, Ni, Pd, and Pt). Thus, 1,1,2,2-tetramethyldisilane vapor in H<sub>2</sub> as a carrier gas was passed at 1150° over an Al<sub>2</sub>O<sub>3</sub> plate coated with Fe powder. SiC whiskers 5-8 mm long with a diameter ≥12 μ were formed. When MeSiCl<sub>3</sub> was used no whiskers were formed.  
 ACCESSION NUMBER: 1984:123517 CAPLUS  
 DOCUMENT NUMBER: 100:123517  
 TITLE: Silicon carbide whiskers  
 INVENTOR(S): Taishi, Kobayashi; Endou, Morinobu; Takamizawa, Minoru; Hongu, Tatsuhiko  
 PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan  
 SOURCE: Fr. Demande, 16 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2529584	A1	19840106	FR 1983-10741	19830629
FR 2529584	B1	19861114		
JP 59009220	A2	19840118	JP 1982-113689	19820630
JP 01042885	B4	19890918		
US 4492681	A	19850108	US 1983-505250	19830617
DE 3323436	A1	19840308	DE 1983-3323436	19830629
PRIORITY APPLN. INFO.:			JP 1982-113689	19820630

L38 ANSWER 339 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Anodic oxidation of hypophosphite on Ni, Pd, Pt, Au, and Co electrodes in an aqueous Na citrate [994-36-5] solution was studied to evaluate the catalytic activity of metals during electroless coating. The catalytic activity (as evaluated by the potential at an anodic c.d. of 1 + 10<sup>-4</sup> A/cm<sup>2</sup>) decreased in the order of Au, Ni, Pd, Co, and Pt. Anodic oxidation of hypophosphite did not occur on Cu or Ag electrodes. Apparent activation energy of the anodic reaction increased in the order of Au (7.9), Ni (11), Pd (13), Pt (14), and Co (21 kcal/mol), and suggests that the catalytic activity decreases with increasing activation energy.

ACCESSION NUMBER: 1984:72414 CAPLUS  
 DOCUMENT NUMBER: 100:72414  
 TITLE: Catalytic activities of metals in the anodic oxidation of sodium hypophosphite during electroless coating  
 AUTHOR(S): Ohno, Izumi; Wakabayashi, Osamu; Haruyama, Shiro  
 CORPORATE SOURCE: Tokyo Inst. Technol., Grad. Sch., Nagatsuta, 227, Japan  
 SOURCE: Kinzoku Hyomen Gijutsu (1983), 34(12), 594-9  
 CODEN: KZHGY; ISSN: 0026-0614  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 340 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB New methods were studied for the electroless deposition of Al, Ni, Pd, and alloy contacts for semiconductor devices. The Al deposition from the decomposition of organometallics was studied for Si, glass, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Cu, Cr-Ni steel, and Teflon substrates. Catalysts for this decomposition are Ti-(C<sub>2</sub>H<sub>5</sub>)TiCl<sub>2</sub>, ZrCl<sub>4</sub>, HfCl<sub>4</sub>, and UCl<sub>3</sub>. Ohmic contacts are prepared by heating to form an Al-1.7% Si alloy or depositing Ni on the cleaned Al surface. The uses of photomask etching and lift-off techniques in patterning the Al contacts were investigated. The reductive deposition of Co, Ni, B, and P alloys with W and Mo from NaH<sub>2</sub>PO<sub>2</sub> baths is described with Au catalysts. The Ni deposition on Pb-containing passivating glasses was studied. Pd Schottky contacts with Si are prepared by reductive deposition with tetrachloropalladic acid in baths containing either amino acids, amino alcs., NaH<sub>2</sub>PO<sub>2</sub>, or NH<sub>2</sub>NH<sub>2</sub>.H<sub>2</sub>O. The Pd contacts have poor adhesion.

ACCESSION NUMBER: 1984:43626 CAPLUS  
 DOCUMENT NUMBER: 100:43626  
 TITLE: New technologies for metalization of semiconductor devices  
 AUTHOR(S): Chadda, Madan M.; Scheffelmann, Franz; Stoeger, Wolfgang  
 CORPORATE SOURCE: Ges. Gleichrichterbau Elektron. m.b.H., Semikron, Nuernberg, D-8500, Fed. Rep. Ger.  
 SOURCE: Forschungsber. - Bundesminist. Forsch. Technol., Technol. Forsch. Entwickl. (1983), BMFT-FB-T 83-035, 59 pp.  
 CODEN: BFTEAJ; ISSN: 0340-7608  
 DOCUMENT TYPE: Report  
 LANGUAGE: German

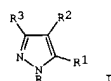
L38 ANSWER 341 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB LMC12 [L = Ph<sub>2</sub>P(CH<sub>2</sub>)<sub>2</sub>nPh<sub>2</sub>, 1,1'-bis(diphenylphosphino)ferrocene (I); n = 2-4; M = Ni; Pd] and (Ph<sub>3</sub>P)<sub>2</sub>MC12 were examined for their catalytic activity in the reaction of MeCH<sub>2</sub>LMgCl with RBr (R = Ph, E-CH<sub>2</sub>CHPh, C<sub>6</sub>H<sub>4</sub>OMe-4, 2-tolyl). I gave 58-97% RCHMeEt and no by-products. I was also a highly effective catalyst for the reaction of BuMgCl, BuZnCl and MeCH<sub>2</sub>ZnCl with RBr to give RBU, RBU and RCHMeEt, resp. The structure of I was determined by x-ray diffraction. The high efficiency of the I catalyst was due to its large P-Pd-P angle and small Cl-Pd-Cl angle.

ACCESSION NUMBER: 1984:34685 CAPLUS  
 DOCUMENT NUMBER: 100:34685  
 TITLE: Dichloro[1,1'-bis(diphenylphosphino)ferrocene]palladium m(II): an effective catalyst for cross-coupling of secondary and primary alkyl Grignard and alkylzinc reagents with organic halides  
 AUTHOR(S): Hayashi, Tamio; Konishi, Mitsuo; Kobori, Yuji; Kumada, Makoto; Higuchi, Taiichi; Miotsu, Ken  
 CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606, Japan  
 SOURCE: Journal of the American Chemical Society (1984), 106(1), 158-63  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 342 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A series of homonuclear Cu(II), Pd(II), Zn, and Co(II) complexes with methionylmethionine were prepared and characterized. Heterodinuclear Pd-Ni and Pd-Cu complexes were also prepared. The activities of these complexes as oxidation catalysts for the conversion of 3,5-di-tert-butyl-1,2-dihydroxybenzene to 3,5-di-tert-butylquinone were determined

ACCESSION NUMBER: 1984:13162 CAPLUS  
 DOCUMENT NUMBER: 100:13162  
 TITLE: Interaction of methionylmethionine with metal ions  
 AUTHOR(S): Bonomo, Raffaele; Musumeci, Salvatore; Rizzarelli, Enrico; Vidali, Maurizio  
 CORPORATE SOURCE: Ist. Dip. Chim. Chim. Ind., Catania, Italy  
 SOURCE: Congr. Naz. Chim. Inorg., [Atti], 16th (1983), 427-30.  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

L38 ANSWER 343 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
GI



AB Pyrazoles I (R - R3 = alkyl, aralkyl, aryl) were prepared by dehydrogenation of pyrazolines with catalysts comprising Cu, Fe, Ni, Pd, or Pt and a basic carbonate, oxide, or hydroxide of an alkali, alkaline earth, or rare earth metal. Thus, 50 g of pyrazoline/h was passed through a tubular reactor at 250° with a Pd catalyst supported on MgO-Al2O3 (19.4:80.6) to give 76% I (R - R3 = H).

ACCESSION NUMBER: 1984:6506 CAPLUS  
DOCUMENT NUMBER: 100:6506  
TITLE: Pyrazoles by catalytic dehydrogenation of pyrazolines  
INVENTOR(S): Getz, Norbert; Rohr, Wolfgang; Mangold, Dietrich; Hupfer, Leopold; Dockner, Toni; Kempe, Uwe  
PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.  
SOURCE: Ger. Offen., 14 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3209148	A1	19830922	DE 1982-3209148	19820313
EP 88963	A1	19830921	EP 1983-102129	19830304
R: AT, BE, CH, DE, FR, GB, IT, LI				
PRIORITY APPLN. INFO.:				DE 1982-3209148 19820313

L38 ANSWER 344 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Mixts. containing isobutene and n-butene were treated with MeOH to yield MeOCMe3, and the n-butene was isomerized to isobutene which was recycled; the isomerization was catalyzed by F2 or SiO2 and a metal (Cr, Pd, Ni, Cu, Mg, Ag) on Al2O3. A catalyst containing SiO2 and Pd was used in a specific example.

ACCESSION NUMBER: 1984:5850 CAPLUS  
DOCUMENT NUMBER: 100:5850  
TITLE: Treatment of C4-olefin cuts  
INVENTOR(S): Convers, Alain; Mikitenko, Paul; Miquel, Jean; Torck, Bernard  
PATENT ASSIGNEE(S): Institut Francais du Pétrole, Fr.  
SOURCE: Fr. Demande, 25 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2520356	A1	19830729	FR 1982-1306	19820126
FR 2520356	B1	19870918	FR 1982-1306	19820126
PRIORITY APPLN. INFO.:				
OTHER SOURCE(S): CASREACT 100:5850				

L38 ANSWER 345 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Linear C4-20 olefins were isomerized over mixts. of alumina, silica, and metals (Cr, Pd, Ni, Cu, Mn, Ag) or metal compds. A hydrocarbon mixture containing 1-butene and 2-butene was passed over an alumina-silica-Pd mixture at 450° at 1 kg/cm2 to give isobutene.

ACCESSION NUMBER: 1983:160221 CAPLUS  
DOCUMENT NUMBER: 98:160221  
TITLE: Isomerization of olefins  
INVENTOR(S): Juquin, Bernard; Miquel, Jean  
PATENT ASSIGNEE(S): Institut Francais du Pétrole, Fr.  
SOURCE: Eur. Pat. Appl., 25 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 66485	A1	19821208	EP 1982-400823	19820504
EP 66485	B1	19840822		
R: BE, DE, GB, IT, NL				
FR 2506297	A1	19821126	FR 1981-10312	19810521
FR 2506297	B1	19860502		
US 4434315	A	19840228	US 1982-380857	19820521
PRIORITY APPLN. INFO.:				FR 1981-10312 19810521

L38 ANSWER 346 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Organic S compds., e.g., mercaptans, and H2S in waste gases were converted to SO2 and eventually to S by an oxidation catalyst containing a TiO2 support (or TiO2-Zr or TiO2-silica mixts.), an alkaline earth metal sulfate, e.g., BaSO4, and at least 1 element of: Ag, Bi, Cd, Co, Cr, Cu, Fe, Ir, the lanthanides, Mo, Mg, Ni, Pd, Pt, Rh, Sn, V, W, Y, Zn. Thus, from a waste gas containing H2S 800, COS 100, and SO2 400 ppm, an oxidative catalyst (TiO2 support, 0.0603 (Fe + Pd):1 Ti, 200 Fe:1 Pd) converted H2S >99, COS 94, and CS2 98%. The catalyst had a sp. surface area of 106 m2/g.

ACCESSION NUMBER: 1982:622206 CAPLUS  
DOCUMENT NUMBER: 97:222206  
TITLE: Catalyst for the oxidation of hydrogen sulfide and/or organic sulfur compounds to sulfur dioxide  
INVENTOR(S): Dupin, Thierry  
PATENT ASSIGNEE(S): Rhone-Poulenc Specialites Chimiques, Fr.  
SOURCE: Eur. Pat. Appl., 25 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

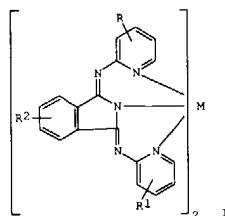
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 60742	A1	19820922	EP 1982-400305	19820222
EP 60742	B1	19841003		
R: AT, BE, DE, FR, GB, IT, NL, SE				
FR 2501662	A1	19820917	FR 1981-5030	19810313
FR 2501662	B1	19841026		
AT 9678	E	19841015	AT 1982-400305	19820222
US 4427576	A	19840124	US 1982-353243	19820301
DK 8201096	A	19820914	DK 1982-1096	19820312
DK 158140	B	19900402		
DK 158140	C	19900827		
JP 58000249	A2	19830105	JP 1982-38242	19820312
JP 61023019	B4	19860604		
ES 510371	A1	19831101	ES 1982-510371	19820312
CA 1167828	A1	19840522	CA 1982-398264	19820312
ES 524012	A1	19840416	ES 1983-524012	19830711
PRIORITY APPLN. INFO.:				FR 1981-5030 19810313
				EP 1982-400305 19820222

L38 ANSWER 347 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB  $\epsilon$ -caprolactam (I) [105-60-2] is prepared by passing cyclohexanone oxime (II) [100-64-1] over a zeolite such as ZSM 5 in which the original cations have been partly or completely replaced by H or a metal such as Ni, Pd, or Zn. Thus, an 8% solution of II in benzene was passed at 350° at LHSV 1.7 over ZSM 5 in which the original cations were replaced with H. The conversion to I was nearly quant. for 15 h. After 15 h, the catalyst was regenerated with air.

ACCESSION NUMBER: 1982:563675 CAPLUS  
 DOCUMENT NUMBER: 97:163675  
 TITLE:  $\epsilon$ -Caprolactam  
 INVENTOR(S): Bell, Weldon Kay; Chang, Clarence Dayton  
 PATENT ASSIGNEE(S): Mobil Oil Corp., USA  
 SOURCE: Eur. Pat. Appl., 22 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 56698	A2	19820728	EP 1982-300133	19820112
EP 56698	A3	19820811		
EP 56698	B1	19850605		
R: BE, DE, FR, GB, IT, NL				
US 4359421	A	19821116	US 1981-225157	19810115
JP 57139062	A2	19820827	JP 1982-4765	19820114
PRIORITY APPLN. INFO.:			US 1981-225157	19810115

L38 ANSWER 348 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



AB The complexes I (R-R2 = H, alkyl, alkoxyalkyl, Ph, CH2Ph, CH2CH2Ph, o-CH:CHCH:CH; M = Co, Mn, Fe, Ni, Pd, Zn, Cu, Ru) were prepared for use as catalysts for the decomposition of cyclohexyl hydroperoxide (no data). Thus, o-(NC)2C6H4 was treated with 2-amino-3-methylpyridine to give 1,3-bis(3-methyl-2-pyridylimino)isoindoline (L) which was treated with Co(OAc)2 in NaOH-MeOH to give CoL2.

ACCESSION NUMBER: 1982:562826 CAPLUS  
 DOCUMENT NUMBER: 97:162826  
 TITLE: 1,3-Bis(2-pyridylimino)isoindolines and compositions containing transition metal complexes thereof  
 INVENTOR(S): Ittel, Steven Dale; Peet, William George  
 PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA  
 SOURCE: Eur. Pat. Appl., 27 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 48024	A1	19820324	EP 1981-107301	19810916
R: BE, DE, FR, GB, IT, NL				
BR 8105805	A	19820608	BR 1981-5805	19810911
JP 57081482	A2	19820521	JP 1981-144067	19810914
PRIORITY APPLN. INFO.:			US 1980-187719	19800916

L38 ANSWER 349 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Mixts. of FCC12CF2Cl and H were contacted with Pt group metals at 175-300° to yield the title compds. A FCC12CF2Cl-H mixture was passed over a Pd/NaMgF3 catalyst at 200° to give FCH:CF2; the FCC1:CF2 which formed initially was converted to FCH:CF2.

ACCESSION NUMBER: 1982:562332 CAPLUS  
 DOCUMENT NUMBER: 97:162332  
 TITLE: Chlorotrifluoroethylene and trifluoroethylene  
 INVENTOR(S): Cunningham, William Joseph; Piskorz, Ronald Fabian; Smith, Addison Miles  
 PATENT ASSIGNEE(S): Allied Corp., USA  
 SOURCE: Eur. Pat. Appl., 17 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 53657	A1	19820616	EP 1981-107076	19810909
EP 53657	B1	19850424		
R: DE, FR, GB, IT				
JP 57122021	A2	19820729	JP 1981-177784	19811105
JP 03059047	B4	19910509		
CA 1230131	A1	19871208	CA 1981-390992	19811126
JP 02167238	A2	19900627	JP 1989-247876	19890922
JP 04033773	B4	19920604		
PRIORITY APPLN. INFO.:			US 1980-214550	19801209

L38 ANSWER 350 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Chelates of Ni, Pd, and Cu with N-(sulfohenyl)salicylaldehydes were synthesized by introducing sulfonic acid groups into the corresponding salicylaldehydes, and their catalytic activities were determined in the oligomerization of 3-methyl-1-butyn-3-ol.

ACCESSION NUMBER: 1982:461688 CAPLUS  
 DOCUMENT NUMBER: 97:61688  
 TITLE: Catalytic conversion of unsaturated compounds in aqueous medium. II. Synthesis and catalytic activity of water-soluble nickel, palladium, and copper chelates  
 AUTHOR(S): Chukhadzhan, G. A.; Elbakyan, T. S.; Sagradyan, L. I.; Matosyan, V. A.  
 CORPORATE SOURCE: Nauchno-Proizvod. Ob'edin. "Nairit", Yerevan, USSR  
 SOURCE: Armyanskii Khimicheskii Zhurnal (1982), 35(4), 252-6  
 CODEN: AYKZAN; ISSN: 0515-9628  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 351 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB Pd in Pd catalysts, Ni electrodes, and noble metal samples was determined photometrically by using 2-(3,5-dibromo-2-pyridylazo)-5-dimethylaminophenol (I). In 0.4-0.53N H2SO4, Pd(II) reacts with I to

form a 1:2 complex having maximum absorption at 580 nm ( $\epsilon_{580} = 6.4 + 104$ ). Beer's law is obeyed for 0-10  $\mu$ g Pd(II)/25 mL. Most metal ions do not interfere with the Pd determination. The interfering Hg(II) can be removed

by evaporation in a HBr-H2SO4 medium. The interference caused by Cu is completely eliminated by the addition of EDTA.

ACCESSION NUMBER: 1982:432795 CAPLUS

DOCUMENT NUMBER: 97:32795

TITLE: 2-(3,5-Dibromo-2-pyridylazo)-5-dimethylaminophenol as a photometric reagent for determination of palladium

AUTHOR(S): Gao, Jialong; Chen, Tongyue

CORPORATE SOURCE: Dep. Chem., Lanzhou Univ., Lanzhou, Peop. Rep. China

SOURCE: Gaodeng Xuexiao Huaxue Xuebao (1981), 2(4), 533-6

CODEN: KTHPDM; ISSN: 0251-0790

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

L38 ANSWER 352 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB Fibrous activated C of sp. surface area 300-2000 m<sup>2</sup>/g, C6H6 adsorption rate constant 20.2/min, strength 215 kg/mm<sup>2</sup>, and diameter 3-25  $\mu$  is loaded with 0.01-20% metal aminopolycarboxylate, the metal being Cu, Ag, Zn, Cd, Cr, Mn, Co, Ni, Pd, or Fe. Thus, 90:10 acrylonitrile-Me acrylate fiber was made flame-resistant in air at 230-50° for 6 h with strain to give 20% shrinkage and activated at 900° for 10 h in steam. The activated C(1200 m<sup>2</sup>/g, 0.6/min, 25 kg/mm<sup>2</sup>, and 5  $\mu$ , resp.) was soaked in 100 vols. of 0.8% aqueous Cu-EDTA for 30 min, dried at 100° for 1 h to be loaded with 2% Cu-EDTA, and a 0.05 g portion was filled in a 35 mm glass tube in 0.03 g/mL filling d. When

air containing 2 ppm O<sub>3</sub> was passed over at 0.023 m<sup>3</sup>/min, O<sub>3</sub> decomposition was 100 %

after 50.

ACCESSION NUMBER: 1982:412562 CAPLUS

DOCUMENT NUMBER: 97:12562

TITLE: Fibrous activated carbon loaded with metal-aminopolycarboxylic acid chelate as an ozone

decomposition catalyst

PATENT ASSIGNEE(S): Toho Beslon Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 57059635	A2	19820410	JP 1980-135253	19800930
PRIORITY APPLN. INFO.:			JP 1980-135253	19800930

L38 ANSWER 353 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB Photoemission spectra obtained with 21.2-eV He I radiation are reported for clean Pt clusters and those with chemisorbed Cl<sub>2</sub>. The peak of the Pt d emission shifts toward the Fermi energy with increasing cluster size. The difference spectra due to Cl<sub>2</sub> show effects dependent upon Pt cluster size at  $\leq 25$  atoms. Finally, the difference spectra due to Cl<sub>2</sub> chemisorbed to Pt are compared with those of other metals including Ni, Pd, Ag, and Cu, all of which are

different.

ACCESSION NUMBER: 1982:223745 CAPLUS

DOCUMENT NUMBER: 96:223745

TITLE: Study of chlorine chemisorption on platinum clusters

AUTHOR(S): Baetzold, R. C.

CORPORATE SOURCE: Res. Lab., Eastman Kodak Co., Rochester, NY, 14650,

USA

SOURCE: Inorganic Chemistry (1982), 21(6), 2189-91

CODEN: INOCAJ; ISSN: 0020-1669

DOCUMENT TYPE: Journal

LANGUAGE: English

L38 ANSWER 354 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB Title only translated.

ACCESSION NUMBER: 1982:187905 CAPLUS

DOCUMENT NUMBER: 96:187905

TITLE: Decomposition of sodium hypophosphite alkaline solutions by palladium-nickel, palladium-copper, and palladium-cadmium dispersed alloys

Vert, Z.

USSR

Termodinam. i Kinet. Khim. Protessov, L. (1981)

108-11

From: Ref. Zh., Khim. 1982, Abstr. No. 6B1322

Journal

LANGUAGE: Russian

L38 ANSWER 355 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The hydrogenation of maleic anhydride and acid, succinic anhydride and acid, and  $\gamma$ -butyrolactone over Ru0.01-2M0.01-2M10.01-2M20.01-10n (M = Ni, Pd, Ni-Pd mixture; M1 = is at least one of Fe, Co, Rh, Os, Ir, Pt; M2 = Zn, Cd, Zn-Cd mixture) gave HO(CH2)4OH and THF.  $\gamma$ -Butyrolactone was contacted with H over a Ru-Ni-Co- Zn catalyst to give HO(CH2)4OH.  
 ACCESSION NUMBER: 1982:68804 CAPLUS  
 DOCUMENT NUMBER: 96:68804  
 TITLE: Manufacture of 1,4-butanediol and tetrahydrofuran  
 INVENTOR(S): Pesa, Frederick A.; Graham, Anne M.  
 PATENT ASSIGNEE(S): Standard Oil Co., USA  
 SOURCE: U.S., 5 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4301077	A	19811117	US 1980-218856	19801222
CA 1157031	A1	19831115	CA 1981-384444	19810824
JP 57109736	A2	19820708	JP 1981-164882	19811014
JP 04059303	B4	19920921		
EP 55512	A1	19820707	EP 1981-305152	19811029
EP 55512	B1	19841017		
R: BE, DE, GB, IT, NL				
PRIORITY APPLN. INFO.:			US 1980-218856	19801222

L38 ANSWER 356 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The preparation of solid catalysts for the oxidation of H2S and/or organic S compds. to SO2 is described. Using oxides or mixts. of oxides of the metals from group A: Ti, Si, Zr, and Mg or a zeolite as a support structure and at least one catalytically active metal from group B: Cu, Ag, Zn, Cd, Y, and Lanthanides, Cr, Mo, W, Mn, Fe, Co, Rh, Ir, Ni, Pd, Pt, Sn, and Bi, where the atomic ratio, A/B = 0.5-400, the catalysts are produced and they catalyze the oxidation of H2S and/or org. S compds. in O2 containing atmospheric at 200-500° and space velocity 1500-10,000 h-1. The group A oxide preps. do not have a spinel structure. Thus, a catalyst of Fe and Pt on a TiO2 support with a (Fe+Pt)/Ti atomic ratio of 0.060 and ratio of 100 was used to treat a gas at 380° and space velocity 1800 h-1 containing H2S 800, COS 100, CS2 500, SO2 400 ppm, O2 2%, H2O 30, and N2 67.82%. The degree of oxidation of H2S, CS2, and COS was >99, 98, and 89%, resp.  
 ACCESSION NUMBER: 1982:54769 CAPLUS  
 DOCUMENT NUMBER: 96:54769  
 TITLE: Catalysts and oxidation of hydrogen sulfide and/or organic sulfur compounds  
 INVENTOR(S): Dupin, Thierry; Dupuy, Georges  
 PATENT ASSIGNEE(S): Rhone-Poulenc Industries S. A., Fr.  
 SOURCE: Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 39266	A1	19811104	EP 1981-400574	19810410
EP 39266	B1	19841024		
R: AT, BE, CH, DE, FR, GB, IT, NL, SE				
FR 2481252	A1	19811030	FR 1980-9127	19800423
FR 2481252	B1	19850920		
FR 2481253	A1	19811030	FR 1980-9128	19800423
FR 2481253	B1	19850920		
AT 9984	E	19841115	AT 1981-400574	19810410
JP 57024638	A2	19820209	JP 1981-59305	19810421
JP 02020561	B4	19900509		
CA 1154734	A1	19831004	CA 1981-376049	19810423
US 4937058	A	19900626	US 1989-311400	19890215
PRIORITY APPLN. INFO.:			FR 1980-9127	19800423
			FR 1980-9128	19800423
			EP 1981-400574	19810410
			US 1981-254652	19810416
			US 1983-538841	19831005
			US 1988-188621	19880429

L38 ANSWER 356 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

L38 ANSWER 357 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The disproportionation and transalkylation of alkylarom. hydrocarbons was catalyzed by mordenite containing Ni, Pd, or Ag. Thus, PhMe was passed over a mordenite containing Ni to give C6H6, xylene, and some PhEt.  
 ACCESSION NUMBER: 1982:19793 CAPLUS  
 DOCUMENT NUMBER: 96:19793  
 TITLE: Zeolite catalyst for transformation of aromatic compounds  
 INVENTOR(S): Marcilly, Christian  
 PATENT ASSIGNEE(S): Institut Francais du Petrole, Fr.  
 SOURCE: Fr. Demande, 17 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2471359	A1	19810619	FR 1979-30665	19791212
FR 2471359	B1	19840817		
PRIORITY APPLN. INFO.:			FR 1979-30665	19791212

L38 ANSWER 358 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The large number of adjacent Ni atoms (12-20) required for catalytic activity in alkane hydrogenolysis on Ni-Cu alloys is discussed in terms of electronic effects. Increasing Cu concentration causes a lowering of the number of Ni nearest neighbor atoms around any Ni, with a consequent narrowing of the Ni 3d-band, causing it to fall below the Fermi level, i.e. the d-band becomes filled. This results in weaker Ni-C bonds and a consequent decrease in hydrogenolysis activity. **Ni-Pd** alloys show only a small drop in catalytic activity on dilution of the Ni, as both metals have unfilled d-bands. There is a greater probability of forming a combined d-band, and unfilled d-orbitals will occur at Ni atoms even at high Pd concns.

ACCESSION NUMBER: 1981:592887 CAPLUS  
 DOCUMENT NUMBER: 95:192887  
 TITLE: Electronic ligand effects in nickel alloy catalysts  
 AUTHOR(S): Burch, Robert  
 CORPORATE SOURCE: Dep. Chem., Univ. Reading, Reading, RG6 2AD, UK  
 SOURCE: Journal of the Chemical Society, Chemical Communications (1981), (16), 845-7  
 CODEN: JCCCAT; ISSN: 0022-4936  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 359 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The oxidation of MeNRRI (R and R1 are alkyl, aryl, aralkyl, alkaryl, and R1 can also be aminoalkyl, or NRRI form a heterocycle, or R is alkyl or aralkyl while R1 = H) over mixts. of Cu, Co, Au, Fe, Hg, Ni, Pd, Pt, Ag, or Zn chloride, bromide, or iodide and Na, K, Li, or ammonium chloride, bromide, or iodide gave the resp. HCONRRI. Thus, Me3N was contacted with O over a CuCl2-NaI mixture at 115° (air pressure 500 psig) to give HCONMe2.

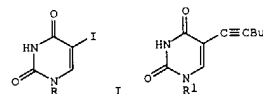
ACCESSION NUMBER: 1981:549981 CAPLUS  
 DOCUMENT NUMBER: 95:149981  
 TITLE: Substituted formamides  
 INVENTOR(S): Bellis, Harold E.  
 PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA  
 SOURCE: U.S., 3 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4281193	A	19810728	US 1980-169530	19800716
EP 44629	A1	19820127	EP 1981-302902	19810626
EP 44629	B1	19830810		
R: BE, DE, FR, GB, IT, NL				
CA 1169085	A1	19840612	CA 1981-381692	19810714
JP 57064650	A2	19820419	JP 1981-109515	19810715
JP 02007938	B4	19900221		
ES 504003	A1	19821116	ES 1981-504003	19810715
PRIORITY APPLN. INFO.:			US 1980-169530	19800716

L38 ANSWER 360 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The temperature, pressure, solvent, catalyst (Pt, Pd, Ni), and catalyst support had little effect on the ratio of 2-methylindoline (I) and octahydro-2-methylindole obtained in the title reaction. The selectivity for I could be improved by adding Cu, Co, Cd, and Fe salts to the catalyst.

ACCESSION NUMBER: 1981:532602 CAPLUS  
 DOCUMENT NUMBER: 95:132602  
 TITLE: Optimization of the catalytic hydrogenation of 2-methylindole  
 AUTHOR(S): Rogovik, V. M.; Chumak, V. T.; Dzvinika, R. I.; Shein, S. M.  
 CORPORATE SOURCE: Rubezh. Filial, Nauchno-Issled. Inst. Org. Poluprod. Krasitelei, Ruberzhnoe, USSR  
 SOURCE: Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1981), 54(6), 1356-9  
 CODEN: ZPKHAB; ISSN: 0044-4618  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 361 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI



AB Ten aliphatic, aromatic, alicyclic, heterocyclic, and steroidal alkynyldeoxyuridines were prepared in low to moderate yields by the Pd- or Ni-catalyzed reaction of the corresponding alkynylzinc compds. with the deoxyuridine I [R = O-bis(trimethylsilyl)deoxyribosyl], followed by hydrolysis. Thus, BuC.tplbond.CH in THF, at 0°, with BuLi followed by ZnCl2, I (R as above), and (Ph3P)2PdCl2, for 24 h gave 92% II (R1 = R) which on hydrolysis gave 30% II (R1 = deoxyribosyl).

ACCESSION NUMBER: 1981:515905 CAPLUS  
 DOCUMENT NUMBER: 95:115905  
 TITLE: The preparation of 5-alkynyl-2'-deoxyuridines by coupling of acetylenic organozinc compounds with 5-iodo-3',5'-O-bis(trimethylsilyl)deoxyuridine when catalyzed by organopalladium and -nickel complexes  
 AUTHOR(S): Vincent, Patrice; Beaucourt, Jean Pierre; Pichat, Louis  
 CORPORATE SOURCE: Serv. Mol. Marqueses, CEN-Saclay, Gif-sur-Yvette, F-91191, Fr.  
 SOURCE: Tetrahedron Letters (1981), 22(10), 945-7  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French



L38 ANSWER 362 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Glass or ceramic substrates are treated with a film of an alkali-metal silicate solution containing Pd, Ni, or Pt catalyst. The substrates are dried and fired. The subsequent electroless metal coating has strong adherence to the substrate. Thus, soda-lime glass was treated at .apprx.50° with the silicate solution prepared from: (a) 5% PdCl<sub>2</sub> in 20% concentrated HCl, diluted for use to 5 volume and adjusted with 5% 1 N HCl; and (b) solution containing 8.9 Na<sub>2</sub>O and 28.7% SiO<sub>2</sub>, added at 11 volumes of diluted a. The treated glass was dried, and baked 30 min at 250° in air. The glass was coated with Ni in electroless NiSO<sub>4</sub> + glycine [56-40-6] bath at 70° and pH 8.7, obtaining a 4000 Å deposit in 4 min. The Ni coating was baked 20 min at ≤300°, and Cu electroplated from a pyrophosphate bath. Both the Ni and Cu coatings were solderable by dipping in Sn-40% Pb [11137-19-2] melt at 230°.

ACCESSION NUMBER: 1981:212889 CAPLUS  
 DOCUMENT NUMBER: 94:212889  
 TITLE: Electroless plating process for glass or ceramic bodies  
 INVENTOR(S): Arnold, Anthony F.  
 PATENT ASSIGNEE(S): Ses, Inc., USA  
 SOURCE: U.S., 5 PP.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4259409	A	19810331	US 1980-127676	19800306
ES 498404	A1	19811116	ES 1981-498404	19810109
IL 61900	A1	19831130	IL 1981-61900	19810113
EP 35626	A1	19810916	EP 1981-100222	19810114
EP 35626	B1	19840111		
R: BE, DE, FR, GB, IT, NL				
ZA 8100340	A	19820224	ZA 1981-340	19810119
BR 8100795	A	19810908	BR 1981-795	19810208
JP 56139670	A2	19811031	JP 1981-33056	19810306
			US 1980-127676	19800306

PRIORITY APPLN. INFO.:

L38 ANSWER 363 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The hydrogenation efficacy of the 4 heterogenous and 1 homogenous (Ni-Fe Ziegler) catalysts decreased in the order Pd>Rh>Ni-Fe>Ni<sub>2</sub>Cu-Cr. The catalysts used were: 5%Pd/C type 87L, 5%Rh/C type 20, Ni coated with 25% of a K<sub>2</sub>NP metal, Cu chromite containing 31% Cu, and Ni-Fe Ziegler containing 4% Ni. With regard to thio-resistance the catalysts formed a decreasing order: Ni-Fe Ziegler/Rh/C > Ni<sub>2</sub>Cu-Cr > Pd/C > 5%Pd/C. Based on data on the quantity of metals required for hydrogenation of a unit wt (100 g) of oil, S-metal relation, and composition of C18 fatty acids in hydrogenated oil, 2 catalysts, Pd/C and Ni-Fe Ziegler, performed best, especially in the case of crude oil, when it was thermally conditioned prior to hydrogenation.

ACCESSION NUMBER: 1981:82437 CAPLUS  
 DOCUMENT NUMBER: 94:82437  
 TITLE: Comparison of some catalysts in the selective hydrogenation of new rapeseed oil  
 AUTHOR(S): Cecchi, G.; Castano, Josiane; Ucciani, E.  
 CORPORATE SOURCE: Univ. Aix-Marseille 3, ITRG, Marseille, 13397, Fr.  
 SOURCE: Revue Francaise des Corps Gras (1980), 27(10), 443-7  
 CODEN: RFGGAE; ISSN: 0035-3000  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French

L38 ANSWER 364 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The growth of LaB<sub>6</sub> whiskers from a LaCl<sub>3</sub>-BCl<sub>3</sub>-H<sub>2</sub> system was investigated on various materials with reference to their catalytic effects. Cu, Ag, Au, Fe, Co, Ni, Pd, Pt, Si, SiO<sub>2</sub>, and mullite porcelain were effective for the growth of LaB<sub>6</sub> whiskers. The LaB<sub>6</sub> whiskers grew at 1100-1250° on all the substrates examined. The LaB<sub>6</sub> whiskers grew up preferentially in the <100> direction with a square cross-section. An exception was the growth on Fe where the whiskers developed preferentially in the <111> direction with a hexagonal cross-section. Small spheres were observed on the tip of LaB<sub>6</sub> whiskers at the initial stage in the growth on Cu and Pt, suggesting that the LaB<sub>6</sub> whiskers on metal agents start to grow by a vapor-liquid-solid mechanism. The growth rate showed a maximum against BCl<sub>3</sub> concentration for mullite, Pt, and SiO<sub>2</sub>. The highest growth rate was .apprx.2.4 mm/h on Pt. The nucleation and growth of LaB<sub>6</sub> whiskers were accelerated in the presence of SiHCl<sub>3</sub> in the reacting gas mixture.

ACCESSION NUMBER: 1980:504935 CAPLUS  
 DOCUMENT NUMBER: 93:104935  
 TITLE: Catalytic effects of various materials on the growth of lanthanum hexaboride whiskers by chemical vapor deposition  
 AUTHOR(S): Hagimura, Atsushi; Kato, Akio  
 CORPORATE SOURCE: Fac. Eng., Kyushu Univ., Fukuoka, 812, Japan  
 SOURCE: Nippon Kagaku Kaishi (1980), (7), 1108-13  
 CODEN: NKAKB8; ISSN: 0369-4577  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 365 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The role of the collectivized systems of s and d electrons of a ferromagnetic in the process of adsorption (H and N) and catalysis (NH<sub>3</sub> decomposition) was studied exptl. on Ni- 3 weight% Cu and Ni- 6 weight% Cu films and on layered Pd-Ni films and by using the s-d volume interaction theory of S. V. Vonsovskii in the exptl.-data anal. The spontaneous magnetization of the films affects the ratio of charged forms of chemisorbed H and N and decreases the electron-work function in the ferromagnetic state. The magnetic state of films changes during the chemisorption owing to the change of parameters of the s-d volume interaction and owing to the energy change of the surface magnetic anisotropy, the kinetic parameters of the NH<sub>3</sub> decomposition change due to either the spontaneous magnetization or to a change of limiting stage or to a change of surface active-center concentration.

ACCESSION NUMBER: 1980:11738 CAPLUS  
 DOCUMENT NUMBER: 92:11738  
 TITLE: Effect of magnetization on chemisorption and catalytic properties of nickel and nickel alloy films  
 AUTHOR(S): Yagodovskii, V. D.; Denisov, G. N.; Mikhaleenko, I. I.;  
 CORPORATE SOURCE: Temko, S. V.  
 SOURCE: Univ. Druzh. Nar. im. Lumumby, Moscow, USSR  
 Tезисы Dokl. Vses. Simp. Akt. Poverkhn. Tverd. Tel, 2nd (1977), 20. Tartuskii Univ.: Tartu, USSR.  
 CODEN: 41VEA8  
 DOCUMENT TYPE: Conference  
 LANGUAGE: Russian

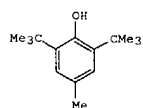
L38 ANSWER 366 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The effect of the atomic deposition of **Zn**, **Pt**, **Pd**, **Ni**, and **Ag** on ZnO and Al<sub>2</sub>O<sub>3</sub> on the catalytic activity and adsorption of mol. and atomic H was studied.  
 ACCESSION NUMBER: 1980:11714 CAPLUS  
 DOCUMENT NUMBER: 92:11714  
 TITLE: Nature of the activation effect of the surface of metal oxides by atomic, cluster, and submicroscopic particles of metals  
 AUTHOR(S): Myasnikov, I. A.; Miloserdov, I. V.  
 CORPORATE SOURCE: Nauchno-Issled. Fiz.-Tekh. Inst. im. Karpova, Moscow, USSR  
 SOURCE: Tezisy Dokl. Vses. Simp. Akt. Poverkhn. Tverd. Tel, 2nd (1977), 6-7. Tartuskii Univ.: Tartu, USSR.  
 CODEN: 4LVEA8  
 CONFERENCE  
 DOCUMENT TYPE: Russian  
 LANGUAGE:

L38 ANSWER 367 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Acetylenic compds. in the presence of the title complexes  $M(AlCl_4)_n \cdot 2R$  ( $M = Co, Ni, Pd, Cu$ ;  $n = 1, 2$ ;  $R = C_6H_6, PhCl, PhMe, PhOMe$ ) underwent arylation or polymerization  
 The course of the reaction depended on  $PhC.tplbond.CH$ , and  $tert-BuC.tplbond.H$  the acetylenic compound and nature of the transition metal in the complex.  
 E.g., acetylene [74-86-2] in benzene solution in the presence of  $Co(AlCl_4)_2 \cdot 2C_6H_6$  [56574-20-0] or  $Ni(AlCl_4)_2 \cdot 2C_6H_6$  [69254-96-2] underwent selective arylation to 1,2-diphenylethane [103-29-7], whereas vinylacetylene in the presence of these complexes gave corresponding polymer [25085-29-4] in 40-50% yield. The intermediate complexes of  $CuAlCl_4$  with  $HC.tplbond.CH$ ,  $PhC.tplbond.CH$ , and  $tert-BuC.tplbond.CH$  were isolated and characterized.  
 ACCESSION NUMBER: 1979:492041 CAPLUS  
 DOCUMENT NUMBER: 91:92041  
 TITLE: Transformations of acetylenic compounds in the presence of cationic bis-arene complexes of transition metals  
 AUTHOR(S): Chukhadzhyan, G. A.; Abramyan, Zh. I.; Kukolev, V. P.;  
 CORPORATE SOURCE: Gevorgyan, G. A.; Tonyan, G. M.; Melkonyan, L. N. Nauchno. Proizvod. Ob'edn. "Nairit", Yerevan, USSR  
 SOURCE: Armyanskii Khimicheskii Zhurnal (1978), 31(8), 607-13  
 CODEN: AYKZAN; ISSN: 0515-9628  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 368 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Some aspects of the characterization of alloy surfaces by Auger spectrometry and thermal desorption are discussed. Examples demonstrate how the results of the surface composition help to understand the catalytic data. The catalytic systems discussed are: **Pt-Pd**, **Pd-Ni**, **Pt-Au**, and **Ni-Cu**.  
 ACCESSION NUMBER: 1979:142560 CAPLUS  
 DOCUMENT NUMBER: 90:142560  
 TITLE: Surface composition and catalysis on alloys  
 AUTHOR(S): Ponec, V.  
 CORPORATE SOURCE: Gorlaeus Lab., Rijksuniv. Leiden, Leiden, Neth.  
 SOURCE: Surface Science (1979), 80, 352-66  
 CODEN: SUSCAS; ISSN: 0039-6028  
 JOURNAL; General Review  
 DOCUMENT TYPE: English  
 LANGUAGE:

L38 ANSWER 369 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The growth of TiN whiskers from the  $TiCl_4-H_2-N_2$  system was investigated on various metals and refractory oxides. **Ni**, **Pd**, **Pt**, **Ag**, **Si**, and mullite porcelain were effective for the growth of TiN whiskers. TiN whiskers grew at 900-1250° on **Ni**, **Pd**, **Pt**, **Ag**, and **Si** and at 1300-1400° on mullite. TiN whiskers grew preferentially in the <111> direction on mullite. On **Ni**, most whiskers grew in the <100> direction and a part of whiskers grew in the <112> direction. The growth rate in the axial direction showed maximum against both  $TiCl_4$  and  $N_2$  concns. The growth rate increased with  $H_2$  concentration. Small globes containing **Ni** were observed on the tips of whiskers at the initial stage of TiN growth on **Ni**. The similar globes were observed on the TiN whiskers grown on **Pd** and **Pt**. TiN whiskers on **Ni** grow by the vapor-liquid-solid mechanism at the initial stage with subsequent growth by the vapor-solid mechanism. The growth on mullite seems to occur by the vapor-solid mechanism from the initial stage.  
 ACCESSION NUMBER: 1979:113106 CAPLUS  
 DOCUMENT NUMBER: 90:113106  
 TITLE: Catalytic effects of various materials on the growth of titanium nitride whiskers by chemical vapor deposition  
 AUTHOR(S): Hagimura, Atushi; Tamari, Nobuyuki; Kato, Akio  
 CORPORATE SOURCE: Fac. Eng., Kyushu Univ., Fukuoka, Japan  
 SOURCE: Nippon Kagaku Kaishi (1979), (1), 49-56  
 CODEN: NKAKBB; ISSN: 0369-4577  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 370 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
GI



AB The title compound (I), a known antioxidant for petroleum products polymers, and animal fats (no data), was prepared by an improved method. Thus, Mannich reaction of 2,6-(Me<sub>3</sub>C)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>OH gave 3,5,4-(Me<sub>3</sub>C)<sub>2</sub>(HO)C<sub>6</sub>H<sub>2</sub>CH<sub>2</sub>NMe<sub>2</sub>, hydrogenolysis of which over Raney Ni gave 98.7% I. Pd/C, Pd/Al<sub>2</sub>O<sub>3</sub>, Pt/Al<sub>2</sub>O<sub>3</sub>, and Ni-Cu/Al<sub>2</sub>O<sub>3</sub> were also used.

ACCESSION NUMBER: 1979:87014 CAPLUS  
DOCUMENT NUMBER: 90:87014  
TITLE: 2,6-Di-tert-butyl-4-methylphenol  
INVENTOR(S): Zakharova, N. V.; Liakumovich, A. G.; Michurov, Yu. I.; Shalimova, Z. S.  
PATENT ASSIGNEE(S): USSR  
SOURCE: U.S., 5 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4122287	A	19781024	US 1977-769116	19770216
RO 92661	B3	19870930	RO 1977-89435	19770217

PRIORITY APPLN. INFO.: US 1977-769116 19770216

L38 ANSWER 372 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB Pd and Pd-alloy membrane catalysts were prepared by deposition of films of Pd or Pd alloys on siloxanes or silicone rubber, which are themselves supported on a metal-ceramic plate. The catalysts were used in cyclopentadiene hydrogenation to cyclopentene. In an example, a metal-ceramic plate (Cu-based) was used as a support for a Me siloxane polymer vulcanized with an amino silane and filled with ZnO. This was covered with a catalytic Pd sheath of 0.1 μ thickness. The catalyst was used to hydrogenate cyclopentadiene to cyclopentene at 151°. Other catalysts were Pd-Ni and Pd-Ru alloys.

ACCESSION NUMBER: 1978:586660 CAPLUS  
DOCUMENT NUMBER: 89:186660  
TITLE: Hydrogen-permeable membrane catalyst based on palladium or its alloys for hydrogenation of unsaturated organic compounds  
INVENTOR(S): Gryaznov, V. M.; Smirnov, V. S.; Vdovin, V. M.; Ermilova, M. M.; Gogua, L. D.; Fritula, N. A.; Litvinov, I. A.  
PATENT ASSIGNEE(S): Topchiev, A.V., Institute of Petrochemical Synthesis, USSR; Lumbua, P., University of Friendship of

Nations  
SOURCE: Ger. Offen., 13 pp.  
CODEN: GWXXBX

DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2710277	A1	19780914	DE 1977-2710277	19770309
DE 2710277	B2	19800430		
DE 2710277	C3	19810108		
JP 57007546	B4	19820210	JP 1977-28115	19770316
JP 53113789	A2	19781004		

PRIORITY APPLN. INFO.: DE 1977-2710277 19770309

L38 ANSWER 371 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Waste gases containing NOx and optionally SOx are mixed with NH<sub>3</sub> and O<sub>3</sub>, Cl<sub>2</sub>,

and passed through a catalyst containing Fe, V, Cu, Ti, Mo, Cr, Mn, Co, Ni, Pd, and/or Pt. Thus, a waste gas containing 200 ppm NO was mixed with 200 ppm O<sub>3</sub> and 400 ppm NH<sub>3</sub>, and passed through catalyst containing 0.1% Cu to remove 85% NO.

ACCESSION NUMBER: 1979:60547 CAPLUS  
DOCUMENT NUMBER: 90:60547  
TITLE: Catalytic reduction of nitrogen oxides in waste gases  
INVENTOR(S): Takahashi, Kazuyoshi  
PATENT ASSIGNEE(S): Sumitomo Heavy Industries, Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JXXXXF

DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 53123367	A2	19781027	JP 1977-38348	19770404

PRIORITY APPLN. INFO.: JP 1977-38348 19770404

L38 ANSWER 373 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB C3-10 amines were prepared from C3-10 alca. and(or) aldehydes and NH<sub>3</sub> by catalytic hydrogenation at 150-250° and 10-60 atmospheric. The catalysts, prepared by alkaline treatment of alloys containing Ni 40-8,

Al 40-50, Cr 1-6, and(or) Fe 1-6, and(or) Si 1-2 weight% to the point of .apprx.50% of the Al content, followed by treatment with promoters, such as Ni, Pd, Co, Mg, Cr, and Cu, were stable for >1000 h. Thus, an alloy containing Al 47, Ni 48, Cu 3, and Si 2% was treated with 3% aqueous NaOH at 40-5° until the alloy contd. 23% Al, the alloy was treated with 1% Co(OAc)<sub>2</sub> and 1% Zn(OAc)<sub>2</sub> solns. for 12 h, washed until pH 10, dried in a mixt. of 80% H and 20% N, heated at 60 and 100° in the same gas, heated at a rate of 4-5°/h to 210° and kept at constant temperature for 2 h to give 3 mL catalyst. A mixture (90 mL/h) of 1.5 L BuOH and 4 L liquid NH<sub>3</sub> was passed through the catalyst together with a 4:1 mixture of H and N at 210° and 60 atm to give a mixture of BuNH<sub>2</sub> 73.4, Bu<sub>2</sub>NH 24.1, and Bu<sub>3</sub>N 1.4%. The catalyst had a constant activity after 1000 h.

ACCESSION NUMBER: 1978:579532 CAPLUS  
DOCUMENT NUMBER: 89:179532  
TITLE: Amines  
INVENTOR(S): Csaszar, Mrs. Erno; Horvath, Laszlo; Hesser, Mrs. Odon; Kisgergely, Lajos; Jesztl, Mrs. Janos; Kincses, Gyula; Nagy, Csaba; Szeller, Bela; Schneider, Mrs. Janos; Szentgyorgyvari, Eva  
PATENT ASSIGNEE(S): Peti Nitrogenművek, Hung.  
SOURCE: Hung. Taljes, 19 pp.  
CODEN: HUXXBU

DOCUMENT TYPE: Patent  
LANGUAGE: Hungarian  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
HU 14908	O	19780527	HU 1976-PE972	19760223
HU 172700	P	19781128		

PRIORITY APPLN. INFO.: HU 1976-PE972 19760223

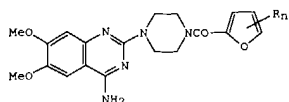
L38 ANSWER 374 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In the presence of M(II) salts (M = Co, Cu, Ni, Pd) ROH (R = Me, Et, Pr, CHMe2, or Me2CHCH2) added to R1C6H4NHC(:NH)NHC(:NH)NHC(:NH)OR, which were isolated as metal complexes. The complexes were characterized by anal., electronic and IR spectra, magnetic moments, and elec. conductivity.  
 Cu formed mono and bis ligand complexes with the neutral phenylamidinoalkylureas; the bis complexes are square planar, bi-univalent electrolytes, and paramagnetic. Ni formed bis ligand complexes whereas Pd formed mono complexes; both are diamagnetic. MeOH addition reactions initiated by Co ultimately formed tris ligand complexes. Co also formed mixed chelates containing both dicyandiamide and amidinoalkylurea ligands.  
 ACCESSION NUMBER: 1978:572768 CAPLUS  
 DOCUMENT NUMBER: 89:172768  
 TITLE: Addition of alcohols to phenyldicyandiamides. Metal complexes of 1-phenylamidino-O-alkylurea and related ligands  
 AUTHOR(S): Dutta, R. L.; Manihar Singh, Akoljam  
 CORPORATE SOURCE: Inorg. Chem. Lab., Univ. Burdwan, Burdwan, India  
 SOURCE: Journal of Inorganic and Nuclear Chemistry (1978), 40(3), 417-23  
 CODEN: JINCAO; ISSN: 0022-1902  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 376 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The production and characterization are discussed of several porous Ni sintered electrodes, activated with Pt, Pd, and Ag, for the anodic oxidation of MeOH in fuel cells. The activation was conducted by a chemical exchange reaction:  $Ma + MBX (solution) \rightarrow Ma/MB + MaX (solution)$ , where Ma is the metal of the skeleton material (Ni), Mb is the catalyst metal (Pd, Pt or Ag) and X is a univalent anion, e.g. Cl<sup>-</sup>. The current-voltage curves of the electrodes in 9M KOH + 4M MeOH at 60° were plotted. Polarization, in general, decreases with increasing quantity of catalyst.  
 ACCESSION NUMBER: 1978:481918 CAPLUS  
 DOCUMENT NUMBER: 89:81918  
 TITLE: Porous electrodes for the oxidation of methanol in alkaline solutions  
 AUTHOR(S): Radovici, O.; Bandi, A.  
 CORPORATE SOURCE: Inst. Phys. Chem., Bucharest, Rom.  
 SOURCE: Ext. Abstr., Meet. - Int. Soc. Electrochem., 28th (1977), Volume 2, 282-5. Dr. R. V. Moshtev: Sofia, Bulg.  
 CODEN: 38RZAL  
 DOCUMENT TYPE: Conference  
 LANGUAGE: German

L38 ANSWER 375 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Coupling reactions of Grignard reagents with organic halides catalyzed by transition metals such as Fe, Ag, Cu, Ni, Pd, Co, Au, and Rh, and the reactions of Grignard reagents with carbon-carbon unsatd. bonds were reviewed with 62 and 92 refs., resp.  
 ACCESSION NUMBER: 1978:545912 CAPLUS  
 DOCUMENT NUMBER: 89:145912  
 TITLE: Synthetic reactions using Grignard-type transition metal compounds  
 AUTHOR(S): Tamao, Kohei; Kumada, Makoto; Akutagawa, Susumu; Otsuka, Seinosuke  
 CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, Japan  
 SOURCE: Kagaku no Ryoiki, Zokan (1977), 117, 45-74  
 CODEN: KNRZAN; ISSN: 0368-6299  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Japanese

L38 ANSWER 377 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The composition of the binary alloys of Pd with Al, Cu, or Ni changed significantly due to a treatment with reduction or oxidation agents. A treatment with H causes a significant enrichment of Pd-Cu and Pd-Al alloys with the lower melting component. The oxides of Cu and Ni, resp., appear on Pd-Cu and Pd-Ni alloy surfaces after a treatment with air. Under conditions of catalytic dehydrogenation of cyclohexane to C6H6, the Pd-Ru and Pd-Rh surface becomes enriched in the 2nd component. This redistribution of relative concentration is accompanied by a sharp increase of catalytic activity.  
 ACCESSION NUMBER: 1978:449445 CAPLUS  
 DOCUMENT NUMBER: 89:49445  
 TITLE: Effect of the nature of the treatment on the composition of the surface layer of binary palladium alloys  
 AUTHOR(S): Shpiro, E. S.; Ustinova, T. S.; Smirnov, V. S.; Gryaznov, V. M.; Antoshin, G. V.; Minachev, Kh. M.  
 CORPORATE SOURCE: Inst. Org. Khim. im. Zelinskogo, Moscow, USSR  
 SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1978), (4), 763-7  
 CODEN: IASKA6; ISSN: 0002-3353  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 378 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
GI



AB The title compound (I; R<sub>n</sub> = H; ) or its hydrohalide salts were prepared by the dehalogenation of I (R = Cl, Br, iodo; n = 1-3) at 0-150° in the presence of a dehalogenation catalyst, e.g., Pd, Cu, Co, Ni, Pd-Pt, Pd-Ru, Ph-Rh, optionally in the presence of an acid acceptor, e.g., NaOH, CaO, N-methylpyrrolidine.

ACCESSION NUMBER: 1978:152662 CAPLUS  
DOCUMENT NUMBER: 88:152662  
TITLE: Catalytic dehalogenation for the production of 2-(4-(2-furoyl)piperazin-1-yl)-4-amino-6,7-dimethoxyquinazoline

INVENTOR(S): Hammen, Philip Dietrich  
PATENT ASSIGNEE(S): Pfizer Inc., USA  
SOURCE: Ger. Offen., 29 pp.  
CODEN: GWXXBK  
Patent

DOCUMENT TYPE: German  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2731737	A1	19780209	DE 1977-2731737	19770711
CA 1065317	A1	19781030	CA 1977-281453	19770627
IL 52394	A1	19800731	IL 1977-52394	19770627
SE 7707472	A	19780207	SE 1977-7472	19770628
SE 436032	B	19841105		
SE 436032	C	19850221		
ZA 7703898	A	19780530	ZA 1977-3898	19770628
AU 7726637	A1	19780427	AU 1977-26637	19770630
NO 7702488	A	19780207	NO 1977-2488	19770713
NO 147912	B	19830328		
NO 147912	C	19830706		
NL 7707792	A	19780208	NL 1977-7792	19770713
NL 171448	B	19821101		
NL 171448	C	19830405		
ES 460685	A1	19780701	ES 1977-460685	19770713
CS 202074	P	19801231	CS 1977-4679	19770713
CH 633794	A	19821231	CH 1977-8701	19770713
FI 7702193	A	19780207	FI 1977-2193	19770714
FI 65999	B	19840430		
FI 65999	C	19840810		
DK 7703200	A	19780207	DK 1977-3200	19770714
DK 143601	B	19810914		
DK 143601	C	19820208		
JP 53021181	A2	19780227	JP 1977-90227	19770727

L38 ANSWER 379 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB The relation was studied of B content in the powdered ppts. of Fe, Co, Ni, Pd, and Pt, obtained during reduction of their salts from a solution with BH<sub>4</sub><sup>-</sup>, to the medium pH, temperature, and the nature of some of the ligands. The presence of B in Cu, Ag, Pb, Sn, Bi, and Re obtained by the same method was investigated also. The pH and the type of ligand used affected the amount of B precipitated. The presence of ligands decreased the amount of B in Co and increased it in the Fe. The ppts. obtained at increased temperature, as a rule, contained less B. The greatest B decrease was observed in Fe, the least in Ni and Co, whereas in the reduced Pd it practically did not change. No B was detected in the Ag, Sn, Pb, Bi, and Re reduced with BH<sub>4</sub><sup>-</sup>, from either alkaline or acidic solns. with or without the ligands. No clear correlation between the amount of B and their catalytic activity was established.

ACCESSION NUMBER: 1978:139953 CAPLUS  
DOCUMENT NUMBER: 88:139953  
TITLE: Inclusion of boron in deposits of metals reduced by borohydride

AUTHOR(S): Kaskelis, A.; Valsiuniene, J.  
CORPORATE SOURCE: USSR  
SOURCE: Issled. Obl. Elektroosazhdeniya Met., Mater. Resp. Konf. Elektrokhim. Lit. SSR, 15th (1977), 152-7. Akad. Nauk Lit. SSR, Inst. Khim. Khim. Tekhnol.: Vilnius, USSR.  
CODEN: 37QJAT  
DOCUMENT TYPE: Conference  
LANGUAGE: Russian

L38 ANSWER 378 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

GB 1526180	A	19780927	GB 1977-32651	19770803
BE 857491	A1	19780206	BE 1977-179921	19770804
HU 19969	O	19810528	HU 1977-PI586	19770804
HU 177714	P	19811228		
FR 2360591	A1	19780303	FR 1977-24260	19770805
FR 2360591	B1	19810109		
DD 131855	C	19780726	DD 1977-200469	19770805
PL 104355	P	19790831	PL 1977-200090	19770805
RO 73523	P	19810831	RO 1977-91289	19770805
DK 8003974	A	19800919	DK 1980-3974	19800919
DK 144475	B	19820315		
DK 144475	C	19820823		
SE 8203583	A	19820609	SE 1982-3583	19820609
SE 439162	B	19850603		
SE 439162	C	19850912		

PRIORITY APPLN. INFO.: US 1976-712277 19760806  
DK 1977-3200 19770714

L38 ANSWER 380 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB The catalytic decomposition mechanism of hydrazine on Al<sub>2</sub>O<sub>3</sub>-supported metal catalysts was studied by use of 15N-labeled hydrazine. The metal catalysts were Ru, Co, Rh, Ir, Ni, Pd, Pt, and Cu. The redistribution of N was studied. At 60-300°, N mols. were always formed from a single hydrazine mol. without N-N bond breaking or scrambling.

ACCESSION NUMBER: 1978:111137 CAPLUS  
DOCUMENT NUMBER: 88:111137  
TITLE: Catalytic decomposition of nitrogen-15-labeled hydrazine on alumina-supported metals

AUTHOR(S): Maurel, R.; Menez, J. C.  
CORPORATE SOURCE: Groupe Rech. Catal. Chim. Org., Univ. Poitiers, Poitiers, Fr.

SOURCE: Journal of Catalysis (1978), 51(2), 293-5  
CODEN: JCTLA5; ISSN: 0021-9517

DOCUMENT TYPE: Journal  
LANGUAGE: English

L38 ANSWER 381 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB With respect to supported **catalysts** of Pt, Pd, Ni, Co, Fe, and Cu, effects of support parameters (particle size, shape: pellet, sphere, and honeycomb, and metal content) on **catalyst** performance are exemplified by data from 3 refs. on the liquid-phase hydrogenation of PhNO<sub>2</sub> in AcOH on Pt-on-C **catalysts** and the pressure loss across the **catalyst** bed as a function of flow rate.

ACCESSION NUMBER: 1977:607164 CAPLUS  
 DOCUMENT NUMBER: 87:207164  
 TITLE: Effects of supports in metallic **catalysts**  
 AUTHOR(S): Yamanaka, Tatsuo  
 CORPORATE SOURCE: Nippon Engelhard, Ltd., Tokyo, Japan  
 SOURCE: Kagaku Kagyo (1977), 28(9), 995-9  
 CODEN: KAKOAY; ISSN: 0451-2014  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 382 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Treatment of waste gases from oxidative dehydrogenation of n-C<sub>4</sub>H<sub>10</sub> [106-97-8] is described. Al/Pt, Pt-Pd/Ni-Cr, and Cu-Cr **catalysts** were tested in a 20 m<sup>3</sup>/h unit. With the Al/Pt **catalyst** and a large O excess, a high degree of purification was achieved at 250°. The Pt-Pd/Ni-Cr **catalyst** gave good results at 180-200° at a gas/air ratio of 1.5-1.7. The Cu-Cr **catalyst** was less active.

ACCESSION NUMBER: 1977:605713 CAPLUS  
 DOCUMENT NUMBER: 87:205713  
 TITLE: Catalytic cleaning of exhaust gases from the production of synthetic rubber monomers  
 AUTHOR(S): Alanova, T. G.; Kulikova, V. N.; Mikheeva, T. Ya.; Orlova, L. N.  
 CORPORATE SOURCE: Nauchno-Issled. Inst. Prom. Sanit. Ochist. Gazov, Dzerzhinsk, USSR  
 SOURCE: Promyshlennaya i Sanitarnaya Ochistka Gazov (1977), (2), 18-20  
 CODEN: PSGADK; ISSN: 0131-5498  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 383 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Catalytic properties of metallurgically-prepared binary Pd-based alloys were studied as functions of the nature and content of the 2nd component. Pd-Ni and Pd-Ru alloys were more active for cyclohexane dehydrogenation than the other alloys. An activity maximum was observed in Pd-Ni, Pd-Ru, and Pd-Pt alloy composition ranges. However, increasing the Ag content decreased the catalytic activity of Pd-Ag systems, including the intermetallic compds. Pd<sub>3</sub>Ag<sub>2</sub> and PdAg. Oxidation by air at 750° and reduction by H at 350° of Pd-Ru and Pd-Rh alloys enhanced the activities and the roughness of the surfaces of these foils. X-ray photoelectron spectroscopy of Pd-Rh foils showed that the alloy surfaces were enriched in Rh after use as **catalysts** for cyclohexane dehydrogenation. The highest selectivity in the hydrogenation of cyclopentadiene to cyclopentene was shown by Pd-Ru and Pd-Rh alloys which were used as H-permeable membrane **catalysts**.

ACCESSION NUMBER: 1977:557605 CAPLUS  
 DOCUMENT NUMBER: 87:157605  
 TITLE: Binary palladium alloys as selective membrane **catalysts**  
 AUTHOR(S): Gryaznov, V. M.; Smirnov, V. S.; Slin'ko, M. G.  
 CORPORATE SOURCE: P. Lumumba Peoples' Friendship Univ., Moscow, USSR  
 SOURCE: Proc. Int. Congr. Catal., 6th (1977), Meeting Date 1976, Volume 2, 894-902. Editor(s): Bond, Geoffrey C.; Wells, Peter B.; Tompkins, F. C. Chem. Soc.: Letchworth, Engl.  
 CODEN: 36PRA7  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

L38 ANSWER 384 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB X-ray photoelectron spectroscopy showed that the cations of transition elements in dehydrated zeolites form nearly-pure ionic bonding with the zeolite framework. Zeolite pretreatment under vacuum, H<sub>2</sub>, or CO causes reduction of Fe, Co, Ni, Pd, Pt, Cu, Ag, and Zn to the metallic state. The reducibility is affected by the chemical nature of the transition element, the degree of cation exchange, and zeolite composition. The reduction is accompanied by migration of the metal to the external surface; the mobility of the metals in the zeolites decreases in the series: Ag > Pd > Zn > Cu > Ni > Pt > Co. In the polyationic forms (Ag-Cu, Ni-Cu, Ni-Co) the migration of the metals is hindered by their interaction. The oxidation of reduced samples results in formation of the corresponding oxides on the external surface and of cation associates with O anions which do not belong to the zeolite framework. The bonding (M-O) is more covalent than that of isolated cations within the framework. Catalytic studies and XPS show that the state of the transition element is important for zeolite activity in CO oxidation, NO reduction (Ni forms), low-temperature homomol. O exchange (Ni, Co, Pd, Pt forms), and **catalyst** selectivity (Ni zeolite) in the alkylation synthesis of sec-butylbenzene from C<sub>6</sub>H<sub>6</sub> and C<sub>2</sub>H<sub>4</sub>.

ACCESSION NUMBER: 1977:557596 CAPLUS  
 DOCUMENT NUMBER: 87:157596  
 TITLE: The study of zeolite **catalysts** containing transition elements by means of x-ray photoelectron spectroscopy  
 AUTHOR(S): Minachev, Kh. M.; Antoshin, G. V.; Shpiro, E. S.; Yusifov, Yu. A.  
 CORPORATE SOURCE: N. D. Zelinskii Inst. Org. Chem., Moscow, USSR  
 SOURCE: Proc. Int. Congr. Catal., 6th (1977), Meeting Date 1976, Volume 2, 621-32. Editor(s): Bond, Geoffrey C.; Wells, Peter B.; Tompkins, F. C. Chem. Soc.: Letchworth, Engl.  
 CODEN: 36PRA7  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

L38 ANSWER 385 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Oxidation states and bonding of transition metals in synthetic zeolites were studied by ESCA. In dehydrated zeolites, Fe2+, Co2+, Ni2+, Cr3+, Pd2+, and Cu2+ form predominantly ionic bonds. For Ni, Co, and Cr the effective charges are comparable to those of their cations in crystalline fluorides and chlorides. On treatment with H or CO, the above 6 cations and Ag+ and Zn2+ are reduced to metal. When reduction is performed at a low temperature, the formation of Ni+, Pd+, and Cu+ was observed. Reduction of transition metals in zeolites is accompanied by their migration toward the outer surface. Catalytic activity of the investigated catalysts is related to the transition metal reduction.  
 ACCESSION NUMBER: 1977:557575 CAPLUS  
 DOCUMENT NUMBER: 87:157575  
 TITLE: Study of zeolites containing transition elements by an x-ray photoelectron spectroscopic method  
 AUTHOR(S): Minachev, Kh. M.; Antoshin, G. V.; Shpiro, E. S.; Yusifov, Yu. A.  
 CORPORATE SOURCE: Inst. Org. Khim. im. Zelinskogo, Moscow, USSR  
 SOURCE: Kinetika i Kataliz (1977), 18(3), 587  
 CODEN: KINKTA4; ISSN: 0453-8811  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 386 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The activity and selectivity of Pd catalysts coprecipitated with Zr(OH)4, Ni(OH)2, Cd(OH)2, and Zn(OH)2 were determined in the hydrogenation of HC.tpbond.COCMe2OH to CH2:CHCMe2OH. A Pd catalyst modified by a 45-50% Ni(OH)2-25-50% Zn(OH)2 mixture was the most active and selective.  
 ACCESSION NUMBER: 1977:484440 CAPLUS  
 DOCUMENT NUMBER: 87:84440  
 TITLE: Hydrogenation of dimethylethynylcarbinol on coprecipitated palladium catalysts  
 AUTHOR(S): Kutukov, G. G.; Kolodii, E. V.; Fasman, A. B.  
 CORPORATE SOURCE: Inst. Org. Katal. Elektrokhim., Alma-Ata, USSR  
 SOURCE: Izvestiya Akademii Nauk Kazakhskoi SSR, Seriya Khimicheskaya (1977), 27(2), 6-10  
 CODEN: IKAKAK; ISSN: 0002-3205  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 387 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Crude oil substitutes are prepared from animal, vegetable, or mineral C-containing substances, such as cesspool matter and slaughterhouse refuse, in a 4-stage process including: aerobic fermentation, anaerobic fermentation, reduction with activated H, and decantation and digestion. For the aerobic fermentation, the raw materials are sprayed with sea water or fresh water and exposed to sunlight. The anaerobic fermentation occurs in liquid phase at 35-40° with the addition of H3PO4 or phosphates of alkali metals or alkaline earth metals. The reduction with activated H is carried out in the presence of a catalyst, such as W, As, Co, Ni, Pd, Pt, Cu, Ag, Au, B fluoride, MoS2, ZnCl2, or AlCl3. The decantation and digestion are carried out in storage tanks in the dark under anaerobic conditions or in a N or CO2 stream.  
 ACCESSION NUMBER: 1977:426024 CAPLUS  
 DOCUMENT NUMBER: 87:26024  
 TITLE: Manufacture of crude petroleum from substances containing carbon  
 INVENTOR(S): Jauregui, Fermin B.  
 PATENT ASSIGNEE(S): Spain  
 SOURCE: Span., 15 pp.  
 CODEN: SPXXAD  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Spanish  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ES 428106	A1	19761001	ES 1974-428106	19740709

PRIORITY APPLN. INFO.: ES 1974-428106 19740709

L38 ANSWER 388 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Pd-Ni, -Ti, and -Cu alloys catalyzed the conversion of 1,2-cyclohexanediol (I) to cyclohexanone and PhOH. Pd-Rh alloy converted I to o-(HO)2C6H4 selectively.  
 ACCESSION NUMBER: 1977:189272 CAPLUS  
 DOCUMENT NUMBER: 86:189272  
 TITLE: Effect of the composition of binary palladium alloys on the direction of 1,2-cyclohexanediol catalytic reactions  
 AUTHOR(S): Sarylova, M. E.; Mishchenko, A. P.; Gryaznov, V. M.; Smirnov, V. S.  
 CORPORATE SOURCE: Inst. Neftekhim. Sint. im. Topchieva, Moscow, USSR  
 SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1977), (2), 430-2  
 CODEN: IASKA6; ISSN: 0002-3353  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 389 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The title converter, with very low back pressure, consists of a porous filter impregnated with an adsorbent (K, Li, or Na carbonate) or of a bulk metal catalyst (Pt, Pd, Ni, Cu) mounted on a cylindrical metal screen containing twisted baffles which divert the flow of exhaust gas through the screen and filter.

ACCESSION NUMBER: 1977:145087 CAPLUS  
 DOCUMENT NUMBER: 86:145087  
 TITLE: Exhaust gas purifier for an internal combustion engine  
 INVENTOR(S): Okano, Ryoichi; Bunda, Tsuchio; Mizusawa, Shinichiro; Morita, Akiyoshi  
 PATENT ASSIGNEE(S): Toyota Motor Co., Ltd., Japan; Tsuchiya K. K.  
 SOURCE: U.S., 7 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3966443	A	19760629	US 1974-460895	19740415
JP 49128124	A2	19741207	JP 1973-43981	19730418
PRIORITY APPLN. INFO.:			JP 1973-43981	19730418

L38 ANSWER 390 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB The electrochem. behavior of semiconductor electrodes on which a very small amount of metal is electrodeposited was studied. The cathodic photocurrent-potential curve for the p-type GaP or Si electrode is shifted to 0.2-0.3 V more pos. potential by the deposition of Pt. The cathodic current-potential curve for the n-type GaP electrode is also shifted similarly, but the anodic current-potential curves and the flat band potentials for both the p- and n-GaP electrodes are not changed. From these results and those on the effects of other metals (Pd, Ni, or Cu), it is concluded that the above-mentioned shifts are due to the catalytic actions of the deposited metals on the evolution reaction at the semiconductor electrodes. A tentative model explaining this effect is presented.

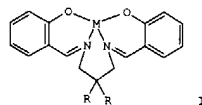
ACCESSION NUMBER: 1977:129787 CAPLUS  
 DOCUMENT NUMBER: 86:129787  
 TITLE: The catalytic effect of electrodeposited metals on the photo-reduction of water at p-type semiconductors  
 AUTHOR(S): Nakato, Yoshihiro; Tonomura, Shoichiro; Tsubomura, Hiroshi  
 CORPORATE SOURCE: Fac. Eng. Sci., Osaka Univ., Toyonaka, Japan  
 SOURCE: Berichte der Bunsen-Gesellschaft (1976), 80(12), 1289-93  
 CODEN: BBPCAX; ISSN: 0940-483X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 391 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 AB Dehydrogenatable organic compds. of 2-12 C atoms are diluted with steam and dehydrogenated in the absence of free O at high conversion and selectivity to less saturated compds. using a catalyst composite of 21 of the metals Ni, Pd, Pt, Ir, and Os, along with Sn and either Au or Ag, deposited on a support such as Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, or a Group II aluminate spinel under the following conditions: 750-1250°F, 0-500 psig, and volumetric space velocity 200-10,000 hr<sup>-1</sup>. Thus, a Sn-containing support was prepared from a slurry of water, Al<sub>2</sub>O<sub>3</sub>, ZnO, and SnO<sub>2</sub> by mixing in a ball mill for 1 hr and drying at 200-220°F overnight. The dry cake was crushed and sieved, 84 polyethylene lubricant was added, and the mixture was formed into 1/8-in pellets, calcined in air, and cooled. The pellets were crushed and sieved to obtain 16-20 mesh particles, the composition of which was Zn 39, Al 26.8, Sn 1.0, and 33.2 weight% O. Catalysts were made using this support and were evaluated in dehydrogenation. All of the catalysts contained 0.6 weight% Pt, and Au, Ag, and Cu were evaluated sep. as promoters. The catalysts containing Au and Ag gave better results in the dehydrogenation of butane [106-97-8] at 1100°F and 100 psig than the unpromoted catalyst or the catalyst containing Cu.

ACCESSION NUMBER: 1976:563173 CAPLUS  
 DOCUMENT NUMBER: 85:163173  
 TITLE: Catalytic dehydrogenation process  
 INVENTOR(S): Farha, Floyd, Jr.; Drehman, Lewis E.  
 PATENT ASSIGNEE(S): Phillips Petroleum Co., USA  
 SOURCE: U.S., 4 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3957688	A	19760518	US 1973-415943	19731115
US 4191846	A	19800304	US 1976-648448	19760112
PRIORITY APPLN. INFO.:			US 1973-415943	19731115

L38 ANSWER 392 OF 514 CAPLUS COPYRIGHT 2004 ACS ON STN  
 GI



AB Chelates (I, M is Co, Cu, Fe, Ni, Pd, or Rh, and R is C<sub>12</sub>H<sub>25</sub>, C<sub>16</sub>H<sub>33</sub>, or C<sub>18</sub>H<sub>37</sub>) derived from the Schiff bases of the 2,2'-dialkyl propylene-1,3-diamine with salicylaldehyde were used as homogeneous catalysts in the hydrogenation of soybean oil. Cu, Fe, Co, Ni, and Pd chelates were tested and different catalytic trends observed. The most active catalysts were the Cu chelates. A marked reduction of trienes to mostly monoenes accompanied by no marked increase of conjugated dienes or trans double bonds was observed in some of the hydrogenation expts. Selectivity values have been calculated; the Fe catalysts had the highest selectivity values but their catalytic activities were usually lower than that of the Cu chelates.

ACCESSION NUMBER: 1976:558090 CAPLUS  
 DOCUMENT NUMBER: 85:158090  
 TITLE: Homogeneous selective catalytic hydrogenation of soybean oil  
 AUTHOR(S): Fedeli, E.; Jacini, G.  
 CORPORATE SOURCE: Exp. Stn. Fats Oils Milano, Milan, Italy  
 SOURCE: Fette, Seifen, Anstrichmittel (1976), 78(1), 30-4  
 CODEN: FSASAX; ISSN: 0015-038X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English



L38 ANSWER 393 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The efficiency of Zn aluminate oxidation **catalysts** for converting process waters, from the catalytic oxidative dehydrogenation of butenes to butadiene (106-99-0), to fresh potable water, and the **catalyst** life were increased by promotion with Ce or La and Bi, Cu, Ir, Mn, Ni, Pd, Pt, and/or Re.

ACCESSION NUMBER: 1976:498786 CAPLUS  
 DOCUMENT NUMBER: 85:98786  
 TITLE: Zinc aluminate **catalyst** compositions

INVENTOR(S): Box, E. O., Jr.; Farha, Floyd, Jr.  
 PATENT ASSIGNEE(S): Phillips Petroleum Co., USA  
 SOURCE: U.S., 6 pp. Division of U.S. 3,823,088.  
 CODEN: USXXAM

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3948808	A	19760406	US 1974-448204	19740305
US 3823088	A	19740709	US 1973-337406	19730302
PRIORITY APPLN. INFO.:			US 1972-255152	19720519
			US 1973-337406	19730302

L38 ANSWER 394 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Good solvents for the hydrogenation of cottonseed oil were a mixture of C5-8 alkanes and a naphthene concentrate, which maximized the rate of hydrogenation.

The best **catalyst**, with respect to selectivity and minimal fatty acid isomerization, was a mixture of Ni 5.9, Cu 2.8, and Pd 0.1% on gumbrin support.

ACCESSION NUMBER: 1976:419376 CAPLUS  
 DOCUMENT NUMBER: 85:19376  
 TITLE: Study of the action of mixed **catalysts** on supports during hydrogenation of cottonseed oil in solvents

AUTHOR(S): Areshidze, Kh. I.; Chivadze, G. O.; Kovaladze, Z. V.; Sokol'skii, D. V.; Orlov, V. K.  
 CORPORATE SOURCE: Inst. Fiz. Org. Khim., Tiflis, USSR  
 SOURCE: Maslozhirrovaya Promyshlennost (1976), (4), 16-17  
 CODEN: MZPYAE; ISSN: 0025-4649  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 395 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The electronic structures of small Cu, Ni, Pd, and Pt clusters having simple-cubic and cubo-octahedral geometries were calculated, using the self-consistent-field-Xa scattered-wave (SCF-Xa-SW) approach to mol.-orbital (MO) theory. As the cluster size and coordination number are increased, the MO results show increasing similarity to the electronic structures of the corresponding crystalline metals, with the results for 13-atom cubo-octahedral clusters exhibiting all the main features of the bulk band structures, e.g., overlap of the "d band" by the "s,p band," a sharp peak in the d. of states around the Fermi level in the cases of Ni, Pd, and Pt, increasing d band width through the series Cu, Ni, Pd, and Pt, and spin polarization of the levels in the case of Ni. The calculated ionization potentials decrease gradually with increasing cluster size and for the 13-atom cubo-octahedral clusters are approx. 2eV greater than the corresponding average bulk work functions. Localized d electron states, split off from the top and bottom of the manifold of closely spaced d levels, are also observed for the cubo-octahedral transition-metal clusters.

These states have no counterparts in the bulk band structures but arise because of the finite cluster size and presence of the cluster "surface". They appear to be cluster analogs of the "surface states" postulated for crystalline transition metals and probably play an important role in the chemisorption and catalytic activities of small metal aggregates of the type utilized as the active centers of heterogeneous **catalysts**. The SCF-Xa-SW MO results for transition-metal clusters are critical compared with those obtained for similar clusters by the extended-Hueckel (EH) and complete-neglect-of-differential-overlap (CNDO) methods. The implications of these results in surface-cluster studies of chemisorption on transition metals are discussed.

ACCESSION NUMBER: 1976:155943 CAPLUS  
 DOCUMENT NUMBER: 84:155943  
 TITLE: Molecular-orbital studies of transition- and noble-metal clusters by the self-consistent-field-Xa scattered-wave method

AUTHOR(S): Messmer, R. P.; Knudson, S. K.; Johnson, K. H.; Diamond, J. B.; Yang, C. Y.  
 CORPORATE SOURCE: Gen. Electr. Corp. Res. Dev., Schenectady, NY, USA  
 SOURCE: Physical Review B: Solid State (1976), 13(4), 1396-415  
 CODEN: PLRBAQ; ISSN: 0556-2805

DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 396 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The catalytic hydrogenation of cottonseed oil in the presence of binary or ternary **catalysts** in EtOH, Me2CO, hexane, cyclohexane, C5-8 alkanes, or naphthene concentrate at 70-110° showed that best results were obtained in the presence of Ni 6, Cu 2, and Pd 0.15% on gumbrin in C5-8 alkanes. The hydrogenation rate of the oil passed through a maximum with increasing temperature, but the maximum rate depended on the solvent used. The apparent activation energy of hydrogenation at 60-90° in C5-8 alkanes is 3.2-5.0 kcal/mole, depending on the **catalyst**. The reaction selectivity increased with increasing H pressure, reaching 0.92 at 4 atmospheric. The hydrogenation rate also increased with increasing oil content (<50%) and was almost a linear function of H pressure.

ACCESSION NUMBER: 1976:107418 CAPLUS  
 DOCUMENT NUMBER: 84:107418  
 TITLE: Hydrogenation of cottonseed oil in solutions on mixed **catalysts**

AUTHOR(S): Chivadze, G. O.; Kobaladze, Z. V.; Areshidze, Kh. I.  
 CORPORATE SOURCE: Inst. Fiz. Org. Khim. im. Melikishvili, Tiflis, USSR  
 SOURCE: Izvestiya Akademii Nauk Gruzinskoi SSR, Seriya Khimicheskaya (1975), 1(4), 347-53  
 CODEN: IGSKDH; ISSN: 0132-6074

DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 397 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The 1st-stage expts. Al2O3-supported metal **catalysts** of Pt, Pd, Ni, Cu, Co, Fe, Mo, Cr, Mn, Zn, and Sn were subjected to activity screening tests with respect to the reactants:  $2\text{NO} + 2\text{H}_2 = \text{N}_2 + 2\text{H}_2\text{O}$ ;  $2\text{NO} + 5\text{H}_2 = 2\text{NH}_3 + 2\text{H}_2\text{O}$ . The **catalysts** tested were prepared via copptn. of hydroxides of each metal and Al followed by reduction with H2 and the screening tests employed 150-500° as reaction temps., 1000 ppm NO and 2.0 volume % H2 contents in the reaction mixts., and 12,000 hr-1 for SV. The test result led to the following classification: Pt, Pd, Ni, and Cu active at 150°; Co, Fe, Mo, and Cr active at 200-400°, and Mn, Zn, and Sn active at 400°. Based on the test result of the high activity of Cu comparable to those of the noble metals, 2-stage expts. were conducted with respect to effects on the Cu activity of the contents in reaction mixts. of NO, H2, and O2; the activity examined consisted of the NO conversion (ratio of NO reacted to NO fed), NH3 formation (ratio of NH3 formed to NO fed), and NH3 selectivity (ratio of NH3 formed to NO reacted). The presence of O2 has in general a hindering effect on the Cu-catalyzed NO reduction by causing the following reactions to proceed in addition:  $2\text{H}_2 + \text{O}_2 = 2\text{H}_2\text{O}$ ;  $4\text{NH}_3 + 5\text{O}_2 = 4\text{NO} + 6\text{H}_2\text{O}$ ;  $4\text{NH}_3 + 3\text{O}_2 = 2\text{N}_2 + 6\text{H}_2\text{O}$ . The effect of O2 is reversible at 300° but irreversible at 150°. Third-stage expts. examined the capability of CH4 to reduce NO according to  $4\text{NO} + \text{CH}_4 = 2\text{N}_2 + \text{CO}_2 + 2\text{H}_2\text{O}$  and  $2\text{NO} + 2\text{CH}_4 = \text{N}_2 + 2\text{CO} + 4\text{H}_2$  over the **catalysts** of Cu- and Pt-alumina. Methane was inferior to H2 as a NO reducing agent and tended to form C deposits causing an irreversible **catalyst** poisoning.

ACCESSION NUMBER: 1976:96021 CAPLUS  
 DOCUMENT NUMBER: 84:96021  
 TITLE: Catalytic reduction of nitric oxide with hydrogen or methane  
 AUTHOR(S): Takayasu, Masami; Tomono, Hiromi; Annen, Yoshiaki; Morita, Yoshiro  
 CORPORATE SOURCE: Dep. Appl. Chem., Waseda Univ., Tokyo, Japan  
 SOURCE: Rikogaku Kenkyusho Hokoku, Waseda Daigaku (1975), 68, 25-31  
 CODEN: WDRRA6; ISSN: 0372-7181  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 399 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Cellular foils made of Pd alloyed with 2 to 95 weight % of Group VIII metal other than Pd, Au, Cu, or Ag consists of alternating and oppositely directed projections with the ratio of the heights of the latter to foil thickness ranging from 10:1 to 200:1. The **catalyst** so designed is suitable for dehydrogenation, dehydrocyclization, hydrogenation, and hydrodealkylation.

ACCESSION NUMBER: 1975:433405 CAPLUS  
 DOCUMENT NUMBER: 83:33405  
 TITLE: Membrane **catalysts** for carrying out simultaneous processes involving evolution and consumption of hydrogen  
 INVENTOR(S): Gryaznov, V. M.; Smirnov, V. S.; Mishchenko, A. P.  
 PATENT ASSIGNEE(S): USSR  
 SOURCE: U.S., 4 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3876555	A	19750408	US 1973-360943	19730516
PRIORITY APPLN. INFO.:			US 1968-741335	19680701
			US 1973-322974	19730112

L38 ANSWER 398 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The preparation of **catalysts** on  $\gamma$ -Al2O3 for use in hydroforming, hydrodesulfurization, and dehydration is described. The  $\gamma$ -Al2O3 (pore volume 1.0-2.75 cm3/g., sp. surface 225-440 m2/g, and bulk d. 0.12-0.40 g/cm3) was prepared by hydrolysis of Al alcoholates and calcining, extruding, and impregnating with metals from Groups IIIB, IVB, VB, VIB, VIIIB, VIII, IB, IIB, In, Ge, Sn, or Bi. For hydrofining of gasoline or C6H6 or other aromas., Ni, Pt, V, Pd, Re, and Ir an  $\gamma$ -Al2O3 is used; for hydrodesulfurization, Mo or W and Ni or Co are used; for dehydration, Cr, Pt, Pd, Mo, Ni, or a metal from Groups VIB and VIII. As an isomerization **catalyst**, Pt, Pd, Ni, Mo, Co, or Cu on  $\gamma$ -Al2O3 carrier is used.

ACCESSION NUMBER: 1975:518414 CAPLUS  
 DOCUMENT NUMBER: 83:118414  
 TITLE: Method and **catalyst** for converting hydrocarbon oil into a technically valuable product  
 INVENTOR(S): Beaty, William R., Jr.  
 PATENT ASSIGNEE(S): Continental Oil Co.  
 SOURCE: Ger. Offen., 25 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2423275	A1	19741205	DE 1974-2423275	19740514
DE 2423275	B2	19800717		
DE 2423275	C3	19810507		
US 3900430	A	19750819	US 1973-360274	19730514
CA 1019352	A1	19771018	CA 1974-196652	19740402
BE 814964	A1	19741113	BE 1974-144270	19740513
FR 2229758	A1	19741213	FR 1974-16449	19740513
GB 1460928	A	19770106	GB 1974-21092	19740513
JP 50019802	A2	19750303	JP 1974-52913	19740514
JP 57045613	B4	19820929		
PRIORITY APPLN. INFO.:			US 1973-360274	19730514

L38 ANSWER 400 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The support for the reduction **catalyst**, based on one or more metals of Group Ib (Cu, Ag, Au), Group IIB (Zn, Hg, Cd), and Group VIII (Fe, Co, Ni, Pd) and Cr and Mn, is a synthetic zeolite such as types A, X, or Y to replace the previously used natural tuff materials such as mordenite. The support may be treated 1st with an aqueous solution of NH4 salt, then sprayed with or immersed in an aqueous solution containing one or more of the above metal ions, and heated to 100°-900° to produce a **catalyst** containing 0.01-10 parts of metal/100 parts by weight of support.

ACCESSION NUMBER: 1975:415141 CAPLUS  
 DOCUMENT NUMBER: 83:15141  
 TITLE: Reduction **catalyst** for removing nitrogen oxides from waste gases  
 INVENTOR(S): Tamura, Takaaki; Fujita, Norihiko; Matsura, Chihiro  
 PATENT ASSIGNEE(S): Research Foundation for the Development of Industries, Japan  
 SOURCE: Ger. Offen., 13 pp. Addn. to Ger. Offen. 2,443,899.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2446006	A1	19750403	DE 1974-2446006	19740926
DE 2446006	B2	19790621		
DE 2446006	C3	19800228		
JP 50059283	A2	19750522	JP 1973-108702	19730927
JP 54008351	B4	19790414		
PRIORITY APPLN. INFO.:			JP 1973-108702	19730927

L38 ANSWER 401 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Straight run naphtha is hydrocracked over metal-exchanged ZSM-5 zeolite, to produce saturated C3-5 and C6+ liquid with increased octane number

The metal may be **Ni, Pd, Pt, Ru, Re, Co, or Sn**, used individually or in mixts. The C6+ liquid will have an octane number 240 higher than the feed. The reaction takes place at 625-725°F, 500-800 psig, liquid space velocity 1-5 hr-1 and H-feed ratio 4-6:1.

ACCESSION NUMBER: 1975:75418 CAPLUS  
 DOCUMENT NUMBER: 82:75418  
 TITLE: Selective naphtha hydrocracking  
 INVENTOR(S): Morrison, Roger A.; Wise, John J.  
 PATENT ASSIGNEE(S): Mobil Oil Corp.  
 SOURCE: U.S., 10 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3843510	A	19741022	US 1973-344453	19730323

PRIORITY APPLN. INFO.: US 1973-344453 19730323

L38 ANSWER 402 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB An O-ionizing electrode for a sealed alkaline storage battery is described where the porous electrode consists of Ni with 400-1000 mg **Ag/cm3** as catalyst. **Pt, Pd, Ni, etc.**, cannot be used because the overvoltage is too low. To prepare the electrode a 0.7 mm thick and .apprx.81-2% porous material was produced by sintering powdered carbonyl Ni mixed with 2% acetylene black in a H stream at 900° for 10 min. The 600 mg **Ag/cm3** was added by impregnating the porous material with a **AgNO3** solution and reducing with **HCHO** solution A fluozinated resin was used for waterproofing.

ACCESSION NUMBER: 1974:55326 CAPLUS  
 DOCUMENT NUMBER: 80:55326  
 TITLE: Sealed alkaline storage battery  
 INVENTOR(S): Fukuda, Masataro; Iwaki, Tsutomu; Iijima, Takashi  
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd.  
 SOURCE: Jpn. Tokkyo Koho, 4 pp.  
 CODEN: JAXXAD  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 4802249	B4	19730704	JP 1969-39301	19690516

PRIORITY APPLN. INFO.: JP 1969-39301 19690516

L38 ANSWER 403 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Zeolites containing **Pd, Ni, or Cu** catalyzed the condensation of Me2CO. E.g., mol. sieve 13+ was impregnated with aqueous **PdCl2**, dried at 300°, then reduced with H at 250° to give a catalyst containing 1% **Pd, Me2CO** and H (2:1) was passed over this catalyst to give 33.9% **Me2CHCH2COMe**.

ACCESSION NUMBER: 1973:536510 CAPLUS  
 DOCUMENT NUMBER: 79:136510  
 TITLE: Methyl isobutyl ketone from acetone in one step  
 INVENTOR(S): Mita, Yukimitsu; Ebisawa, Hisashi; Kametaka, Norio; Takauji, Hisao; Minoura, Takashi  
 PATENT ASSIGNEE(S): Showa Denko K. K.  
 SOURCE: Jpn. Tokkyo Koho, 5 pp.  
 CODEN: JAXXAD  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 48026736	B4	19730815	JP 1967-14447	19670309

PRIORITY APPLN. INFO.: JP 1967-14447 19670309

L38 ANSWER 404 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Deuteration of methyl linoleate (I) with the title catalysts gave saturate, monoene and diene fractions. Monoenes were further separated into cis and trans fractions. A comparison of the double bond distribution in monoenes with those from hydrogenation of alkali-conjugated linoleate indicated that up to 5% of the I was reduced through a conjugated intermediate with **Ni catalyst**. **Cu-chromite catalyst** showed infinite selectivity for the reduction of I, because stearate did not form. The decreasing order of various catalysts for the selective reduction was **Cu-chromite >> Ni** at 195°C > **Pd > Ni** at 100° > **Pt**. Computer simulation of **Pt** reduction indicated that .apprx.20% of I was directly reduced to stearate through a shunt. Geometrical isomers of I were formed during reduction with all catalysts except **Cu-chromite**. Conjugated dienes were the only isomers formed with **Cu-chromite catalyst**. Deuterium was found in these conjugated dienes, which were also extensively isomerized (sic). Since isomerization of monoenes with **Cu-chromite** is negligible, the isotopic distribution of monoenes must be due to exchange of intermediate conjugated dienes followed by addition

ACCESSION NUMBER: 1973:525777 CAPLUS  
 DOCUMENT NUMBER: 79:125777  
 TITLE: Deuteration of methyl linoleate with **nickel, palladium, platinum, and copper-chromite catalysts**  
 AUTHOR(S): Koritala, Sambasivarao; Selke, E.; Dutton, H. J.  
 CORPORATE SOURCE: North. Reg. Res. Lab., Agric. Res. Serv., Peoria, IL, USA  
 SOURCE: Journal of the American Oil Chemists' Society (1973), 50(8), 310-16  
 CODEN: JAOCA7; ISSN: 0003-021X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 405 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A mixture of Me linoleate and alkali-conjugated Me linoleate was reduced with **Ni**, **Pd**, **Pt**, and **Cu**-chromite **catalysts**. Conjugated linoleate was 10-18 times more reactive than Me linoleate with all **catalysts** except **Pt**, which showed no selectivity at 60°. At 150°, conjugated diene reacted four times faster than Me linoleate with **Pt catalyst**. A conjugated diene-to-stearate shunt was observed with **Pd** and **Pt catalysts**. When  $\beta$ -eleostearate was hydrogenated with the same **catalysts**, 50-97% of the triene was reduced directly to monoene with all **catalysts** except **Cu**-chromite, which selectively reduced conjugated triene to conjugated diene.

ACCESSION NUMBER: 1973:491334 CAPLUS  
 DOCUMENT NUMBER: 79:91334  
 TITLE: Kinetics of hydrogenation of conjugated triene and diene **nickel**, **palladium**, platinum, and **copper**-chromite **catalysts**  
 AUTHOR(S): Koritala, S.; Butterfield, R. O.; Dutton, H. J.  
 CORPORATE SOURCE: North. Reg. Res. Lab., Agric. Res. Serv., Peoria, IL, USA  
 SOURCE: Journal of the American Oil Chemists' Society (1973), 50(8), 317-20  
 CODEN: JAOCA7; ISSN: 0003-021X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 406 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The CO, NO<sub>2</sub>, and hydrocarbon portions in automotive exhaust gases were reduced by coating exhaust gas reaction chambers and parts of the combustion chamber with **catalyst** layers containing Group VIII metal all- oys and optionally **Cu**, **Sn**, or **Ag** and adding 10-12% excess O to the combustion gases. Thus, inlet and outlet valves of an internal combustion engine were coat- ed with a 80:10:5 **Pd-Ni** alloy. The exhaust pipe and the quarter bend were partially coated with **Ag** and with a 80:10 **Sn-Ni** alloy and the residual part of the exhaust pipe with a 80:10:5 **Pd-Cu-Ni** alloy. The catalytic activity was constant up to 40,000 km and the exhaust gas contained <1 g CO, <0.5 g hydrocarbons, and <1 ppm NO<sub>2</sub> per 100 kg fuel.

ACCESSION NUMBER: 1973:445316 CAPLUS  
 DOCUMENT NUMBER: 79:45316  
 TITLE: Reduction of the toxicity of automotive exhaust gases  
 INVENTOR(S): Arendt, Horst  
 PATENT ASSIGNEE(S): Arendt, Gundula  
 SOURCE: Ger. Offen., 11 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2157030	A1	19730524	DE 1971-2157030	19711117
PRIORITY APPLN. INFO.:				
			DE 1971-2157030	19711117

L38 ANSWER 407 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB **Pd**, **Ni**, and/or **Cu** metal on MgO-TiO<sub>2</sub> (50-99:50-1 by weight) at 2-30 weight % was used as the **catalyst** for the title manufacture. Thus, MgO-TiO<sub>2</sub> (9:1) was prepared from an aqueous solution of MgCl<sub>2</sub> and TiCl<sub>4</sub> by adjusting to pH 11 to give precipitate, which was dried 20 hr at 110° and calcined 3 hr at 450°. **Pd** on activated C (5%) was mech. mixed with the above oxides at 4 weight % and the mixture was pelleted. Acetone was fed over the **catalyst** (200 cc, activated 2 hr at 250° under H) at 250° and a space velocity of 1.1 hr-1 with 5 times mole H to give AcCH<sub>2</sub>CHMe<sub>2</sub> and (Me<sub>2</sub>CHCH<sub>2</sub>)<sub>2</sub>CO at 45.1 and 33.0 mole % selectivity with 82.0 mole % conversion. At 120° the selectivities were 90.0 and 3.0 mole % resp. with 25.5 mole % conversion.

ACCESSION NUMBER: 1973:405007 CAPLUS  
 DOCUMENT NUMBER: 79:5007  
 TITLE: Direct manufacture of methyl iso-butyl ketone and di-iso-butyl ketone by reaction of acetone with hydrogen  
 INVENTOR(S): Kiyoura, Tadimitsu  
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals Co., Ltd.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 48014610	B4	19730223	JP 1971-49418	19710705

L38 ANSWER 408 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI For diagram(s), see printed CA issue.  
 AB Hydrogenation of (+)-carvone (I) by **Ni**, **Pt** black, **Pd**, and **Pd/C** gave the entire range of hydrogenated products in various ratios depending on the type of **catalyst** and the conditions. A mechanism for the formation of products was proposed based on intermediate rearrangements and affinity for the **catalyst** surface. (-)-Menthyl (II) and (-)-bornyl furoate (III) were hydrogenated by **Ni-Pd** (OH)<sub>2</sub>-C to give a stereospecific tetrahydrofurfuryl alc. (-)-Menthone was hydrogenated in the presence of a bis(o-[N-( $\alpha$ -methylbenzyl)formimidoyl]phenolato)**copper catalyst** to give optically inverted products. Activation energy for the process was 5.3 kcal/mole.

ACCESSION NUMBER: 1973:148078 CAPLUS  
 DOCUMENT NUMBER: 78:148078  
 TITLE: Stereochemistry of the hydrogenation of (+)-carvone and (-)-menthyl- and (-)-bornyl furoates on nickel, platinum, palladium, and ruthenium. Mechanism of the optical inversion of (-)-menthone catalyzed by optically active chelate **catalysts**  
 AUTHOR(S): Klabunovskii, E. I.; Godunova, L. F.; Pavlov, V. A.  
 CORPORATE SOURCE: Inst. Org. Khim. im. Zelinskogo, Moscow, USSR  
 SOURCE: Mezhdunar. Kongr. Efilznm Maslam, [Mater.], 4th (1971)  
 , Meeting Date 1968, Volume 1, 157-63. Editor(s): Naumenko, P. V. "Pishchevaya Promyshlennost":  
 Moscow,  
 USSR.  
 CODEN: 26JFAW  
 DOCUMENT TYPE: Conference  
 LANGUAGE: Russian

L38 ANSWER 409 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Extended Hueckel and CNOMO calcs. were performed for clusters of metallic atoms to determine possible catalytic properties. Data for pure clusters of Ag, Pd, Cd, Cu, and Ni are reported, as well as for alloy systems of Pd-Ni and TrCu-Ni. The results indicate the presence of d-band holes in Ni and Pd clusters with a greater amount in Ni. Clusters of Ag and Cd have as low energy form the linear geometry in preference to other 3-dimensional geometries. Clusters have a low bond energy (BE) and a different electronic configuration than their bulk metals. The effect of substrates on metal clusters is examined and is shown to be capable of altering electron occupancy of the cluster.

ACCESSION NUMBER: 1973:128842 CAPLUS  
 DOCUMENT NUMBER: 78:128842  
 TITLE: Molecular orbital description of catalysis by metal clusters  
 AUTHOR(S): Baetzold, Roger C.  
 CORPORATE SOURCE: Res. Lab., Eastman Kodak Co., Rochester, NY, USA  
 SOURCE: Journal of Catalysis (1973), 29(1), 129-37  
 CODEN: JCTLAS; ISSN: 0021-9517  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 410 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The titles pyridines were prepared from  $\gamma$ -cyanoketones and H with a Ni, Pd, or Cu dehydrogenating catalyst. E.g. a gaseous mixture of MeCO(CH<sub>2</sub>)CN (I) an 9 mole H<sub>2</sub> was passed, with a space velocity of 0.32 g I/mL of catalyst/hr through a tubular reactor containing a 10% (weight) Ni on silica gel catalyst at 172°. The catalyst had a bulk d. of 0.6 g/ml and was pretreated with H at 450° for 90 hr. After 20 hr the reaction gave 41%  $\alpha$ -pipicoline and 51% of a mixture of  $\alpha$ -methyltetrahydropyridine and  $\alpha$ -picoline.

ACCESSION NUMBER: 1973:124454 CAPLUS  
 DOCUMENT NUMBER: 78:124454  
 TITLE: C-substituted pyridines and/or hydrogenated, C-substituted pyridines  
 PATENT ASSIGNEE(S): Stamcarbon N. V.  
 SOURCE: Brit., 5 pp.  
 CODEN: BRXXAA  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1304155	A	19730124	GB 1971-26131	19710419
NL 7004993	A	19711012	NL 1970-4993	19700408
NL 164029	B	19800616		
NL 164029	C	19801117		

PRIORITY APPLN. INFO.: NL 1970-4993 19700408

L38 ANSWER 411 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Electrolytic oxidation was studied of N<sub>2</sub>H<sub>4</sub> in 6M KOH on palladized Ag, Co, Ni, Pd, and Pt electrodes. The catalytic activity of Pd deposits depended on the support material in the order Ag > Pt > Pd > Ni > Co. The deposition potential of Pd also effects its catalytic activity.

ACCESSION NUMBER: 1973:66208 CAPLUS  
 DOCUMENT NUMBER: 78:66208  
 TITLE: Effect of a support on the electrocatalytic activity of palladium on black enamel  
 AUTHOR(S): Konstantinova, G. S.; Ul'ko, N. G.  
 CORPORATE SOURCE: USSR  
 SOURCE: Tr. Mosk. Energ. Inst. (1972), No. 112, 47-52  
 From: Ref. Zh., Khim. 1972, Abstr. No. 19B1274  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 412 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The dehalogenations of haloethanes and haloethanes over metals (Cu, Ag, Au, Fe, Co, Ni, Pd, and Pt) supported by silica gel were studied by the microcatalytic pulse technique to elucidate the mechanism. The dechlorination reactivities of cis- and trans-1,2-dichloroethylene and the dechlorination products from dl- and meso-2,3-dichlorobutane were observed from the basis of stereoselectivity.

The order of catalytic activities among the metals for the dehalogenation of haloethanes was: Pt > Cu ~ Ni > Ag ~ Co ~ Pd > Fe ~ Au. Dehalogenation proceeded exclusively in the 1,2-dihaloethanes. However, dehydrohalogenation took place in the 1,2-dihaloethanes to an appreciable extent when the product distributions of dehydrohalogenation were similar to those on solid acids.

Both 1,1,2-trichloroethane and 1,2-dichloropropane were more reactive than 1,2-dichloroethane. 1,2-Dichloroethylenes from 1,1,2,2-tetrachloroethane and 2-butenes from dl- and meso-2,3-dichlorobutane were nearly in equilibrium ratio of cis/trans forms. A comparison of these results with those of the dehydrohalogenation on solid acids, indicate that dehalogenation of haloalkanes on metals proceeds through a radical step-by-step mechanism.

ACCESSION NUMBER: 1972:525509 CAPLUS  
 DOCUMENT NUMBER: 77:125509  
 TITLE: Dehalogenation of haloalkanes on silicon dioxide-supported metals  
 AUTHOR(S): Anju, Yasuhide; Mochida, Isao; Yamamoto, Hiroko; Kato, Akio; Selyama, Tetsuro  
 CORPORATE SOURCE: Fac. Eng., Kyushu Univ., Fukuoka, Japan  
 SOURCE: Bulletin of the Chemical Society of Japan (1972), 45(8), 2319-23  
 CODEN: BCSJAB; ISSN: 0009-2673  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 413 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A review with 165 refs. includes discussion of: preparation and characterization of metal alloy films; and adsorption and catalysis on films of the binary alloys **Cu-Ni**, **Pd-Au**, **Pd-Ag**, **Pd-Rh**, **Pt-Au**, **Pt-Ru**, **Ni-Au**, and **Au-Ag**.  
ACCESSION NUMBER: 1972:425275 CAPLUS  
DOCUMENT NUMBER: 77:25275  
TITLE: Adsorption and catalysis on evaporated alloy films  
AUTHOR(S): Moss, R. L.; Whalley, L.  
CORPORATE SOURCE: Warren Spring Lab., Stevenage, UK  
SOURCE: DBCW File (1972), 22, 115-89  
CODEN: ADCTCO  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

L38 ANSWER 414 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A stable and highly active **catalyst**, for use in the hydrogenation of **PhNO<sub>2</sub>**, vegetable oils, etc., or in the oxidation of aldehydes and hydrocarbons, or in the purification of the exhaust gases from automobiles, etc., was prepared by mixing 2.6 ml **H<sub>2</sub>PtCl<sub>6</sub>** (0.07329 g **Pt/ml** solution) + 4.3 ml **Na<sub>2</sub>PdCl<sub>4</sub>** (0.0719 g **Pd/ml** solution) + 0.9 ml water + 7.8 ml **EtOH** + 9.5 g powdered **Al<sub>2</sub>O<sub>3</sub>** (the carrier) until the solution was completely absorbed by the **Al<sub>2</sub>O<sub>3</sub>**. The mixture was kept at room temperature for 2 days, dried at 110-20° for 5-6 hr, and then heated at 200-50° for 2 hr. The **Pt** + **Pd** content was 5 of the total **catalyst** weight, and the **Pt** to **Pd** atomic ratio was 1:3. **Pd-Ni**, **Pd-Cu**, **Pd-Fe**, **Pd-Co**, and **Pd-Ru** **Al<sub>2</sub>O<sub>3</sub>**-supported **catalysts** were similarly prepared, always with the use of **Na<sub>2</sub>PdCl<sub>4</sub>**. Other carriers (e.g. **Al** silicates, silica gels, mol. sieves) can be used.  
ACCESSION NUMBER: 1972:104360 CAPLUS  
DOCUMENT NUMBER: 76:104360  
TITLE: Palladium-containing **catalyst**  
INVENTOR(S): Sokol'skii, D. V.; Popova, N. M.; Baizikenovna, M. B.; Savel'eva, G. A.; Sokolova, L. A.; Rozmanova, L. D.; Varshavskii, I. L.; Zolotarevskii, L. S.; Goncharov, V. V.  
PATENT ASSIGNEE(S): Institute of Chemical Sciences, Kazakh S.S.R.  
SOURCE: Brit., 3 pp.  
CODEN: BRXXAA  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1258371		19711230	GB	19700114

L38 ANSWER 415 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The topics reviewed include: exptl. techniques; chemisorption of mol. O on **Ni**, **Pt**, **Cu**, and **Ag**; chemisorption of mol. N on **Ni**, **Pt**, **Rh**, and **Cu**; adsorption of mol. H on **Ni** and **Pt**; adsorption of the halogens; adsorption of CO on **Ni**, **Pd**, **Pt**, and **Cu**; adsorption of S on **Ni**, **Cu**, and **Ag**; adsorption of **C<sub>2</sub>H<sub>4</sub>**; catalytic formation of water from the elements; decomposition reactions; hydrogenation and dehydrogenation of hydrocarbons; and oxidation of metals. 130 refs.  
ACCESSION NUMBER: 1971:533322 CAPLUS  
DOCUMENT NUMBER: 75:133322  
TITLE: Influence of crystallographic orientation on the chemisorption and catalytic properties of face centered cubic metals  
AUTHOR(S): Brau, G.  
CORPORATE SOURCE: Inst. Rec. Catal., Villeurbanne, Fr.  
SOURCE: Annales de Chimie (Paris, France) (1970), 5(6), 539-54  
CODEN: ANCPAC; ISSN: 0151-9107  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: French

L38 ANSWER 416 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Oxidation and dehydrogenation carrier **catalysts** containing 0.5-5% (based on total weight) **Pd** or **Pd-Pt**, **Ni**, **Cu**, and **Fe**, resp., in 1-3.1 atomic ratio, useful, e.g. for purification of fuel gases, were prepared by impregnation of **Al<sub>2</sub>O<sub>3</sub>** or aluminosilicate with aqueous alc. solns. containing **Na<sub>2</sub>PdCl<sub>4</sub>** or **Na<sub>2</sub>PdCl<sub>4</sub>** + **Pt**, **Ni**, **Cu**, and **Fe** salts, resp., and optionally addnl. **NaCl** or **CaCl<sub>2</sub>**, heating 5-6 hr at 110-20° and 1-3 hr at 200-400°. Thus, 15.6 ml of **EtOH** and 19.0 g of **Al<sub>2</sub>O<sub>3</sub>** powder were added to an aqueous solution containing 8.9 ml of **Na<sub>2</sub>PdCl<sub>4</sub>** and 6.6 ml of **NiNO<sub>3</sub>**. The mixture was stirred and stored for 2 days at room temperature and heated 5-6 hr at 110-20° and then 1-2 hr at 300-400° to give a **catalyst** containing 0.5% **Pd-Ni** in 1.1 atomic ratio.  
ACCESSION NUMBER: 1971:480832 CAPLUS  
DOCUMENT NUMBER: 75:80832  
TITLE: Palladium carrier **catalysts**  
INVENTOR(S): Sokol'skii, D. V.; Popova, N. M.; Syzdykbaeva, M. B.; Savel'eva, G. A.; Sokolova, L. A.; Goncharov, V. V.; Varshavskii, I. L.; Solotarevskii, L. S.  
PATENT ASSIGNEE(S): Institute of Chemical Sciences, Academy of Sciences, Kazakh S.S.R.  
SOURCE: Ger. Offen., 11 pp.  
CODEN: GWXXBK  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2001291	A	19710722	DE 1970-2001291	19700113
PRIORITY APPLN. INFO.:			DE 1970-2001291	19700113

L38 ANSWER 417 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB H2C.CHCONH2 (I) and H2C.CMeCONH2 (II) were prepared by hydration of H2C:CHCN

(III) and H2C:CMeCN (IV) with H2O or an H2O-donor over a catalyst containing Raney Cu, Ullmann-Cu, reduced Cu catalyst, Cu on a carrier, Ag, Au, Co, Ni, Pd or Pt. Thus Raney Cu III, and iso-PrOH refluxed 2 hr gave I. The hydration may be carried out at 25-200°/0-300 kg/cm2, and the H2O-donor may be alics., glycols, or mixts. of H with O or air. The reaction may be carried out in EtOH, Me2CO, DMF, Me2SO, or amides.

ACCESSION NUMBER: 1971:435176 CAPLUS  
DOCUMENT NUMBER: 75:35176  
TITLE: Acrylamide and methacrylamide  
INVENTOR(S): Matsuda, Fujio; Takahashi, Toru  
PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals Co., Ltd.  
SOURCE: Ger. Offen., 31 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2036126	A	19710225	DE 1970-2036126	19700721
DE 2036126	C3	19790125		
JP 50022019	B4	19750728	JP 1969-87553	19691104
JP 55011657	B4	19800326	JP 1969-93945	19691125
BE 753365	A	19701216	BE 1970-753365	19700713
US 4056565	A	19771101	US 1970-56967	19700721
NL 7010872	A	19710126	NL 1970-10872	19700722
NL 155825	B	19780215		
FR 2055457	A5	19710507	FR 1970-26986	19700722
GB 1324509	A	19730725	GB 1970-35852	19700723
CH 547259	A	19740329	CH 1970-11177	19700723
SU 454737	D	19741225	SU 1970-1463552	19700723
SE 383875	C	19760805	SE 1970-10202	19700723
SE 383875	B	19760405		
US 4593123	A	19860603	US 1984-675569	19841128

PRIORITY APPLN. INFO.: JP 1969-58021 19690724  
JP 1969-80309 19691009  
JP 1969-87593 19691104  
JP 1969-93945 19691125  
US 1970-56967 19700721  
US 1977-795283 19770509  
US 1979-70516 19790828

OTHER SOURCE(S): CASREACT 75:35176

L38 ANSWER 418 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB Thin foils prepared from binary alloys of Pd with B, Ni, Ag, or Pt were used as the catalysts for dehydrogenation of cyclohexane by using the impulse technique with the catalysts pretreated with H at 350° prior to the runs in the 100-500° range. The apparent activation energy of the reaction was calculated from the temperature coefficient to be: Pd 12, Pd-5%Ni 8, Pd-10%Ni 10, Pd-20%Ag 11, Pd-40%Ag 8, Pd-50%Ag 11, Pd-0.1%Pt 6, Pd-0.5%Pt 6, Pd-1.5%-Pt 5 kcal/mole. The temperature corresponding to 33% hydrocarbon conversion over these catalysts were, resp.: 320°, 255°, 347°, 357°, 422°, 437°, 357°, 272°, and 282°. The alloys with B had low activity and were unstable.

ACCESSION NUMBER: 1971:80189 CAPLUS  
DOCUMENT NUMBER: 74:80189  
TITLE: Effect of the nature and size of the second component of binary palladium alloys on their catalytic activity  
AUTHOR(S): Gyzaznov, V. M.; Polyakova, V. P.; Savitskii, E. M.; Frades, L.; Krapova, E. V.; Juarez, E.; Shkola, G. V.  
CORPORATE SOURCE: Inst. Metal im. Baikova, Moscow, USSR  
SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1970), (11), 2520-4  
CODEN: IASKA6; ISSN: 0002-3353  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

L38 ANSWER 419 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB The title catalysts consist of sheets or tubes made of an alloy of Pd with Au, Cu, B, or elements of Group VIII. They are permeable to H and, as catalysts for H generating reactions, remove the produced H from the reaction medium and thus reduce the chances for secondary reactions. For instance, 10 torr of trans-2-butene in Ar was contacted with a 0.1 mm thick sheet of Pd with 5.5% Ni at 410°. A conversion of 7.3 volume % to 1,3-butadiene was obtained, in addition to 25.5% isomerization to cis-2-butene, and 12.3% to 1-butene, and 11.0% conversion to butane. No breakdown products were observed

ACCESSION NUMBER: 1970:524013 CAPLUS  
DOCUMENT NUMBER: 73:124013  
TITLE: Catalysts for use in processes involving absorption and liberation of hydrogen  
INVENTOR(S): Gyzaznov, V. M.; Smirnov, V. S.; Mishchenko, A. P.  
PATENT ASSIGNEE(S): Topchiev, A. V., Institute of Petrochemical Synthesis  
SOURCE: Fr., 4 pp.  
CODEN: FRXXAK  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1586678		19700227		

PRIORITY APPLN. INFO.: SU 19670707

L38 ANSWER 420 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN

AB Food residues can be removed at 400-500°F from ovens if the ovens are coated first with a suspension of solid, particulate catalytic material in a liquid carrier containing a film forming agent. The catalytic material is Pd, Pt, Ru, Rh, or an oxide, carbonate, hydroxide, cerate, chromate, chromite, manganate, manganite vanadate, or organic salt of Fe, Co, Ni, Pd, Pt, Ru, Rh, Mn, Cr, Cu, Mo, W, or one of the rare earth metals. The film-forming agent is an organic ester of orthotitanic acid or orthosilicic acid, Zr(OH)4, or a chelate of Ti, Si, or Zr with difunctional organic compound  
ACCESSION NUMBER: 1970:481178 CAPLUS  
DOCUMENT NUMBER: 73:81178  
TITLE: Catalytic coatings for self-cleaning ovens  
INVENTOR(S): Stiles, Alvin B.  
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co.  
SOURCE: Brit., 9 pp. Division of Brit. 1197067  
CODEN: BRXXAA  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1197069		19700701	GB	19670628

L38 ANSWER 421 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The relation between the rate of catalytic hydrogenation of carbonyl and other O compds. with a binary H-aryl mixture containing 30% H at 200-300° and their mol. structure, the catalyst activity, and temperature was estimated. The hydrogenation-dehydrogenation behavior of heptanal, 2-pentanone, 3-pentanone, 2-hexanone, 4-methyl-2-pentanone, 3,3-dimethyl-2-butanone, 4-methyl-3-penten-2-one, 5-hexen-2-one, cyclopentanone, cyclohexanone, AcOEt, AcOBu-iso, Bu2O, THF, and dioxane over catalysts containing Pt, Pd, Ni or Cu on diatomite or Chromosorb W was summarized, and the effect of the carbonyl group position, chain branching, olefinic unsatn., and ring size in cyclic ketones was demonstrated. The rate of hydrogenation of the carbonyl group was shown to depend on the equilibrium concentration of the enolic form of the starting compound

ACCESSION NUMBER: 1970:455588 CAPLUS  
 DOCUMENT NUMBER: 73:55588  
 TITLE: Hydrogenation of oxygen compounds by reaction gas-chromatography  
 AUTHOR(S): Krasnoshchekova, R. Ya.; Klesment, I. R.  
 CORPORATE SOURCE: Inst. Khim., Tallin, USSR  
 SOURCE: Eesti NSV Teaduste Akadeemia Toimetised, Keemia, Geoloogia (1970), 19(2), 109-16  
 CODEN: EKEGAI; ISSN: 0424-6373  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 422 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Highly crystalline polyolefins are obtained with a ternary catalyst comprising Et2AlCl or Et3Al, TiCl3, and dithioacetate dimer (I) or its Co, Ni, Pd, Zn, or Pb chelate. Thus, 2 Kg/cm2 C3H6 was polymerized 2 hr at 60° in a 500-ml autoclave with 0.9 g Et2AlCl, 0.5 g 3TiCl3.AlCl3, and 53 mg I in 300 ml C7H16 to give 12.2 g polypropylene containing hot C7H16-insol. part 95.3 vs. 89.3% for the control (no I, 19.8 g yield). Similar polymerization with 38 g C4H8 and Et3Al instead of Et2AlCl gave 31.4 g polybutene containing 64.5% hot Et2O-insols. vs. 55.6% for the control.

ACCESSION NUMBER: 1970:435936 CAPLUS  
 DOCUMENT NUMBER: 73:35936  
 TITLE: Catalysts for  $\alpha$ -olefin polymerizations  
 INVENTOR(S): Sugiyama, Shotaro; Ueno, Haruo; Ishikawa, Hideo; Yano, Takeo; Shimamura, Tsunao  
 PATENT ASSIGNEE(S): Ueb Industries, Ltd.  
 SOURCE: Jpn. Tokkyo Koho, 3 pp.  
 CODEN: JAXXAD  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 45013343	B4	19700514	JP	19670815

L38 ANSWER 423 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Me2CO was condensed to obtain diacetone alc., which by dehydration gave mesityl oxide, and the latter, by hydrogenation in the presence of Pd, Ni, or Cu catalyst on active Al2O3, yielded the title ketone (I) at 130-250°. The most active catalyst was Pd on Al2O3, providing a maximum conversion of .apprx.25% Me2CO into I at lower temperature

ACCESSION NUMBER: 1970:434734 CAPLUS  
 DOCUMENT NUMBER: 73:34734  
 TITLE: Preparation of methyl isobutyl ketone from acetone  
 AUTHOR(S): Raeva, V. S.; Berger, I. I.; Klimenko, M. Ya.  
 CORPORATE SOURCE: Nauch.-Issled. Inst. Sin. Spirt. Org. Prod., Moscow, USSR  
 SOURCE: Neftekhimiya (1970), 10(2), 256-8  
 CODEN: NEFTAH; ISSN: 0028-2421  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 424 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Steam-diluted paraffin hydrocarbons were catalytically dehydrogenated to the corresponding di-olefins by alternate paraffin dehydrogenation and hydrogen oxidation, followed by oxidative dehydrogenation of the olefin to the diolefin. Thus, a 1:1 ZnO-Al2O3 gel was precipitated from a mixed Zn (NO3)2-Al(NO3)3 solution with NH4OH, aged for 1 hr, filtered, dried, and calcined in air for several hr at 850°F. The material was impregnated with aqueous PtCl2 (0.56% Pt based on Zn aluminate), calcined in H at 1000°F, impregnated with aqueous K2CO3 (2.0% K2CO3 based on Zn aluminate), and calcined in H to give a paraffin dehydrogenation catalyst. A H oxidation catalyst was prepared by impregnating a 5 Å mol. sieve with a Ni(NO3)2 solution based on the total catalyst weight, drying, and calcining in air at 1050°F. The catalyst for the final dehydrogenation was prepared by precipitating a Sn oxide hydrogel from an aqueous SnCl4 solution with NH4OH, washing and spray-drying to .apprx.30% H2O. The product was impregnated with aqueous H3PO4 to give final P, Sn, and O contents of 5, .apprx.6%, and .apprx.26% after calcination at 1100°F in air. Using the above catalysts, 100 moles butane was dehydrogenated using 400 moles steam, and the product mixture alternately subjected to 2 hydrogen oxidns and 2 dehydrogenation steps to give a product (II) containing steam 466, butane 5, n-butenes 72, butadiene 4, and by-products 19 moles. II was then dehydrogenated to give a mixture of butane 7, n-butenes 4, and butadiene 89 mole %, which was easily purified to give pure butadiene. Alumina, HF-treated alumina, silica, mag-nesia, zirconia, aluminosilicates, aluminate spinels, Ni, Pd, Pt, Ru, Ir, Rh, Os, Ag, Cu, NiO, Cr2O3, V oxide, and W oxide are also claimed for use in catalyst preps.

ACCESSION NUMBER: 1970:110754 CAPLUS  
 DOCUMENT NUMBER: 72:110754  
 TITLE: Dehydrogenating paraffins to the corresponding diolefins  
 INVENTOR(S): Begley, John W.; Hepp, Harold J.  
 PATENT ASSIGNEE(S): Phillips Petroleum Co.  
 SOURCE: U.S., 3 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3502739	A	19700324	US 1967-648227	19670623
PRIORITY APPLN. INFO.:			US 1967-648227	19670623



L38 ANSWER 425 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Heated filaments of **Pd, Ni, Cu**, and Al catalyze the combination of Xe and F. The principal reaction product was identified as XeF<sub>2</sub> by ir anal. Other metals investigated; Ti, Zr, Mo, Ta, W, Re, Ir, Fe, Cr, V, Rh and Pt were ineffective as **catalysts**. Activation energies and reaction rates are presented for Pd at 50-160° and for Ni at 180-400°. For both metals the reaction is shown to be zero order in Xe and F pressures for partial pressures >50 torr. The catalytically active metals were coated with an ionic fluoride layer under reaction conditions, and Xe is chemical bound to F at this fluoride surface.

ACCESSION NUMBER: 1970:36253 CAPLUS  
 DOCUMENT NUMBER: 72:36253  
 TITLE: Catalytic formation of xenon difluoride  
 AUTHOR(S): Baker, Bruce G.; Fox, P. G.  
 CORPORATE SOURCE: Div. Tribophys., C.S.I.R.O., Melbourne, Australia  
 SOURCE: Journal of Catalysis (1970), 16(1), 102-7  
 CODEN: JCTLA5; ISSN: 0021-9517  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 426 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A short survey of 17 previously published works covering organic syntheses catalyzed by transition metals like **Ni, Pd**, or **Ru**. The methods permit the insertion of various functional groups into organic molecules.

ACCESSION NUMBER: 1970:30754 CAPLUS  
 DOCUMENT NUMBER: 72:30754  
 TITLE: Research in the laboratories of the Societa Montecatini Edison: [organic syntheses catalyzed by transition metals]  
 AUTHOR(S): Chiusoli, Gian Paolo  
 CORPORATE SOURCE: Cent. Chim. Org. Esplorativa, Soc. Montecatini Edison,  
 SOURCE: Novara, Italy  
 DELLE Corsi e Seminari di Chimica, Consiglio Nazionale  
 Ricerche e Fondazione F. Giordani (1968), (10), 77-81  
 CODEN: CSECB7; ISSN: 0579-0670  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Italian

L38 ANSWER 427 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Expts. were carried out as described earlier (CA 70: 100054j), but a new Cu sample (grain size 0.12-0.16 mm.) on MgO was taken for each experiment. The **catalyst** consisted of 0.008 g. Cu and 0.7 g. MgO. The reaction time was 21 min. and the dehydration degree of cyclohexanol (I) was 18, 19.5, 20.5, and 21% at 265, 275, 285, and 295°, resp. The flow rate of I vapor ranged from 600-800 ml./min. The relative adsorption coeffs. of cyclohexanone (.apprx.1) and H<sub>2</sub> (.apprx.0) were practically independent of temperature, volume flow rate of I, and contact time in the range 274-245°, 16,600-18,200 hr.-1, and (5.5-6.027) + 10-5 hr., resp. The dehydrogenation rate consts. (K) of I, decreased slightly with increasing volume flow rate, e.g. at 275°K, decreased from 49.35 to 26.5 as the volume flow rate increased from 16,600 to 18,200 hr.-1. There was a linear dependence between log K and 1/T, and the activation energy (E), was 26,540 cal./mole. The pre-exponential coefficient (K<sub>0</sub>), in the Arrhenius equation was 1.95 + 109. The results were in agreement with those obtained by other authors for dehydrogenation of I over **Cu catalysts**. The values of log K<sub>0</sub> plotted against those of E gave a straight line, similarly as did those obtained by Balandin (CA 27:5593) for dehydrogenation of various organic compds. over **Ni, Pd, Pt, and Os catalysts**. On this basis it is concluded that the mechanism of the dehydrogenation in the fluidized bed is similar to that on stationary **catalysts** and the Balandin's kinetic equation (CA 37: 26452) can be applied for reactions occurring in thin (7 mm.) fluidized beds. 24 references.

ACCESSION NUMBER: 1969:480456 CAPLUS  
 DOCUMENT NUMBER: 71:80456  
 TITLE: Kinetics of the dehydrogenation of cyclohexanol in a fluidized bed of **copper catalyst** on magnesium oxide. Determination of the relative adsorption coefficients of the dehydrogenation products of cyclohexanol-cyclohexanone and hydrogen  
 AUTHOR(S): Skrigan, E. A.  
 CORPORATE SOURCE: Inst. Fiz.-Org. Khim., Minsk, USSR  
 SOURCE: Vestsi Akademii Navuk BSSR, Seriya Khimichnykh Navuk (1969), (3), 34-41  
 CODEN: VBSKAK; ISSN: 0002-3590  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Belorussian

L38 ANSWER 428 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Deuterium-exchanged positions of propylene-d produced in the exchange reactions relating to propylene were investigated on **Cu** and **Rh** with microwave spectroscopy, similarly as done on **Ni, Pd**, and **Pt** in earlier works [Hirota et al., (1965, 1966)]. It was found that the adsorbed species of propylene is drastically different on different metals, and double-bond migration occurs during the adsorption and desorption processes of propylene.

ACCESSION NUMBER: 1969:429902 CAPLUS  
 DOCUMENT NUMBER: 71:29902  
 TITLE: Microwave study of the adsorbed species in the deuterium-exchange reactions of propylene with reference to its catalytic hydrogenation  
 AUTHOR(S): Ueda, Tomiko; Hara, Jizaemon; Hirota, Kozo; Teratani, Shousuke; Yoshida, Noritetsu  
 CORPORATE SOURCE: Inst. Phys. Chem. Res., Tokyo, Japan  
 SOURCE: Zeitschrift fuer Physikalische Chemie (Muenchen, Germany) (1969), 64(1-4), 64-70  
 CODEN: ZPCFAX; ISSN: 0044-3336  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 429 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Fine-grained reduction **catalysts** are produced by heating chromates, dichromates, formates, oxalates, acetates, and complex compds. of Cu, Cr, Zn, Pd, Ni, Co, or Fe, or mixts. of these compds., in a stream of H or in a H-N mixture at 160-220°. A violent exothermic reaction leads to a rapid increase in temperature to >220°. Owing to such reaction conditions, the resulting **catalyst** has a fine-grained, highly porous structure and very high activity, especially in hydrogenation reactions.

ACCESSION NUMBER: 1969:416288 CAPLUS  
 DOCUMENT NUMBER: 71:16288  
 TITLE: Reduction **catalysts** for hydrogenation  
 INVENTOR(S): Fabisz, Ernest; Gortel, Zbigniew; Obloj, Jozef  
 PATENT ASSIGNEE(S): Instytut Cieskiej Syntezy Organicznej  
 SOURCE: Pol., 2 pp.  
 CODEN: POXXA7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Polish  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 55944		19681010	PL	19660317

L38 ANSWER 430 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Catalytic activity of **Pd-Ni**, **Pd-Cu**, **Ni-Cu**, and **Pd-Ni-Cu** melts was studied in decomposition of dilute basic N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O solns. Reaction rate and the elec. resistance varied symthatically with **catalyst** composition. The reaction is catalyzed by the surface electrons of the metals.

ACCESSION NUMBER: 1969:416240 CAPLUS  
 DOCUMENT NUMBER: 71:16240  
 TITLE: Catalytic activity of binary and ternary alloys of the **palladium-nickel-copper** system  
 AUTHOR(S): Lipets, T. V.; Vert, Zh. L.; Tverdokskii, I. P.  
 CORPORATE SOURCE: Inst. Prikl. Khim., Leningrad, USSR  
 SOURCE: Kinetika i Kataliz (1969), 10(1), 206-8  
 CODEN: KNKTA4; ISSN: 0453-8811  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

L38 ANSWER 431 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Fuel cell electrodes having surface area 1-100 m<sup>2</sup>/g., porosity 30-60%, pore size 1-15 µ with >70% 1-5 µ are fabricated by compressing a mixture of 1-12 weight % of noble metal-Al alloy (containing 20-70 weight % Pd, Ru, Rh, Pt, Os, and Ir) and 88-99 weight % base metals, such as Ag, Ni, Ti, and Cr, heating for 20 min. to 24 hrs. at 10-50° below the incipient fusion point of the metals in an inert atmospheric, and leaching out Al in N aqueous alkali metal hydroxide for 8-40 hrs. at 50-100° and reduced pressure of 25-in. Hg and then in 27-30% alkali metal hydroxide for 24-600 hrs. The electrodes can operate several thousand hrs. at d.c. >100 amp./ft.<sup>2</sup> Thus, an electrode composed of Pd 2.25, Al 2.75, Ni 13, and Ag 82% has voltage of 0.150 v. (vs. H) at 100 ma./cm.<sup>2</sup> After washing with distilled H<sub>2</sub>O and storage for 5 months in open air, the electrochem. activity can be restored by purging with H<sub>2</sub> for 10 hrs.

ACCESSION NUMBER: 1969:409102 CAPLUS  
 DOCUMENT NUMBER: 71:9102  
 TITLE: Noble metal aluminum alloys as **catalysts** for fuel cell electrodes  
 INVENTOR(S): Bravo, Justo B.; Dimeler, Glenn R.  
 PATENT ASSIGNEE(S): Sun Oil Co.  
 SOURCE: U.S., 9 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3428490	A	19690218	US 1962-220250	19620829
PRIORITY APPLN. INFO.:			US 1962-220250	19620829

L38 ANSWER 432 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Manufacture of Me<sub>2</sub>CO by gas-phase catalytic hydrogenation of monochloroacetone (I) or 1,1-dichloroacetone or their mixts. at <500° using Cu, Cr, Ni, Pd, or their oxides as **catalyst** is described. Thus, 15 g. CuO-CuCr<sub>2</sub>O<sub>4</sub> of 8-14 mesh in a quartz tube is heated at 390-400° in 6 l./hr. H stream, 9.5 cc./hr. I introduced, and the product condensed, washed with alkali, and distilled to give 64.1% Me<sub>2</sub>CO.

ACCESSION NUMBER: 1969:67623 CAPLUS  
 DOCUMENT NUMBER: 70:67623  
 TITLE: Manufacture of acetone by catalytic hydrogenation of chloroacetones  
 INVENTOR(S): Takahashi, Toshiro; Kasano, Kenshi; Hashimoto, Toshiaki  
 PATENT ASSIGNEE(S): Daikyo Petrochemical Co., Ltd.  
 SOURCE: Jpn. Tokkyo Koho, 2 pp.  
 CODEN: JRXNAD  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 43016729	B4	19680715	JP	19641205

L38 ANSWER 433 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The exchange of iodine between ethyl and propyl iodides was studied over Cu, Fe, Ni, Pd, Rh, and Ir powder catalysts in a flow reactor at <200°. The exchange between ethyl iodide and methyl, butyl, and isopropyl iodides was studied over Rh.  
Decomposition, accompanied by catalyst poisoning, occurred over metals having high heats of formation of the corresponding metal iodide such as Ni and Fe. The energy of activation for the exchange between ethyl and propyl iodides over various metals was in the range 11.6-12.7 kcal./mole. For EtI with other alkyl iodides over Rh, the energy of activation increased slightly with the chain length from 11.2 to 14.4 kcal./mole. The rates suggest a Langmuir-Hinshelwood mechanism, but the heats of adsorption apparently decrease with increasing surface coverage. There is good correlation between relative exchange activity and both relative hydrogenation efficiency and d character of the catalysts.

ACCESSION NUMBER: 1969:2930 CAPLUS  
DOCUMENT NUMBER: 70:2930  
TITLE: Catalytic exchange of iodine in alkyl iodides  
AUTHOR(S): Morrison, R. A.; Krieger, K. A.  
CORPORATE SOURCE: Univ. of Pennsylvania, Philadelphia, PA, USA  
SOURCE: Journal of Catalysis (1968), 12, 25-34  
CODEN: JCTLAS; ISSN: 0021-9517  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L38 ANSWER 435 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The relative reactivities of ethylenic mixts. were examined by competitive hydrogenation using Pt, Pd, Ni, or Cu as catalysts. The hydrogenation was carried out at various conditions of temperature, and pressure. Binary mixture (20-80%) of cyclohexene (I) (A)-methylcyclopentene (B) were hydrogenated in the presence of 1-5% catalyst at different stirring rates. The  $\log(nOA/nA)/[\log(nOB/nB)]$  and  $RAB = KAAAA/KBBB$  were calculated, where nA and nB are the number of moles of A and B, K rate constant, and  $\lambda$  Langmuir adsorption constant. RAB was independent of the catalyst amount, stirring rate, and the initial catalyst composition. The RAC values were determined for a ternary mixture comprised of A, B, and C species. The following are the mixts. (A,B and C) examined using Pt/SiO<sub>2</sub>, in liquid phase, without a solvent at room temperature: I, 2-methyl 1-pentene (II), I; 2-ethyl-1-hexene-I-II; and 1-methylcyclopentene-4-methylcyclohexene-I. In all the mixts. examined  $RAC = RAB + RBC$ .

ACCESSION NUMBER: 1968:402255 CAPLUS  
DOCUMENT NUMBER: 69:2255  
TITLE: Competitive hydrogenation of ethylenic hydrocarbons  
AUTHOR(S): Maurel, Raymond; Elene, Jean Michel; Mariotti, Jean  
CORPORATE SOURCE: Lab. Catal. Org., Fac. Sci., Poitiers, Fr.  
SOURCE: Comptes Rendus des Seances de l'Academie des Sciences,  
Serie C: Sciences Chimiques (1968), 266(9), 599-601  
CODEN: CHDCAQ; ISSN: 0567-6541  
DOCUMENT TYPE: Journal  
LANGUAGE: French

L38 ANSWER 434 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Heating 12.7 g. Et<sub>3</sub>SiH and 10 g. chlohexanol with 0.045 g. colloidal Ni at 125-228° 20 min. gave H<sub>2</sub> and 92.4% triethylsiloxy-cyclohexane, b. 233-5°. In similar reactions with a variety of catalysts it was shown that Ag, SnCl<sub>2</sub>, SnBr<sub>2</sub>, Fe(CO)<sub>5</sub>, Ni, Pd, and H<sub>2</sub>PtCl<sub>6</sub> are effective catalysts. Cu and a wide variety of inorg. salts, metal halides, and related compds. were totally ineffective. The reactivity of various silanes in the presence of Ni with cyclohexanol declined in the order shown: Et<sub>3</sub>SiH, MeBu<sub>2</sub>SiH, MePh<sub>2</sub>SiH, Pr<sub>3</sub>SiH, Bu<sub>3</sub>SiH, iso-Bu<sub>2</sub>SiMeH, iso-Bu<sub>3</sub>SiH. The following R<sub>3</sub>SiOC<sub>6</sub>H<sub>11</sub> (C<sub>6</sub>H<sub>11</sub> = cyclohexyl) were reported (R<sub>3</sub> shown): MeEt<sub>2</sub>, b. 211-13°, d<sub>20</sub> 0.8699, n<sub>D</sub>20 1.4410; MePr<sub>2</sub>, b. 240-1°, 0.8643, 1.4451; iso-Pr<sub>2</sub>Me, b. 240-1°, 0.8763, 1.4505; MeBu<sub>2</sub>, b. 265.5-6.5°, 0.8664, 1.4495; iso-Bu<sub>2</sub>Me, b. 259-61°, 0.8630, 1.4500; iso-Am<sub>2</sub>Me, b. 284-6°, 0.8627, 1.4505; MePh<sub>2</sub>, b. 189-91°, 1.0285, 1.5504; Et<sub>3</sub>, b. 234-4.5°, 0.8776, 1.4495; EtPr<sub>2</sub>, b. 258-60°, 0.8707, 1.4505; iso-Pr<sub>2</sub>Et, b. 259-60°, 0.8836, 1.4570; EtBu<sub>2</sub>, b. 276-8°, 0.8674, 1.4532; iso-Bu<sub>2</sub>Et, b. 272-4°, 0.8716, 1.4552; iso-Am<sub>2</sub>Et, b. 296-8°, 0.8642, 1.4544; EtPh<sub>2</sub>, b. 180-2°, 1.0210, 1.5478; Pr<sub>3</sub>, b. 260-1°, 0.8681, 1.4512; iso-Bu<sub>3</sub>, b. 290-1°, 0.8742, 1.4580; Bu<sub>3</sub>, b. 145-6°, 0.8655, 1.4542; Am<sub>3</sub>, b. 169-71°, 0.8617, 1.4550; iso-Am<sub>3</sub>, b. 145-8°, 0.8629, 1.4562; Ph<sub>3</sub>, b. 124-230-5°, 1.0626, 1.5795; (n-C<sub>6</sub>H<sub>13</sub>)<sub>3</sub>, b. 248.5-9.5°, 0.8616, 1.4580; (n-C<sub>7</sub>H<sub>15</sub>)<sub>3</sub>, b. 221-2°, 0.8606, 1.4584. The reaction is probably a nucleophilic displacement of SN<sub>2</sub> type in which H<sub>2</sub> is expelled by the entering RO group through a 4-center intermediate adduct.

ACCESSION NUMBER: 1968:496810 CAPLUS  
DOCUMENT NUMBER: 69:96810  
TITLE: Reaction of trialkyl(aryl)silanes with cyclohexanol  
AUTHOR(S): Khudobin, Yu. I.; Sergeeva, N. A.; Kharitonov, N. P.  
CORPORATE SOURCE: Inst. Khim. Silikatov im. Grebenshchikova, Leningrad, USSR  
SOURCE: Zhurnal Obshchei Khimii (1968), 38(2), 407-13  
CODEN: ZOKHAA; ISSN: 0044-460X  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

L38 ANSWER 436 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB CrO<sub>2</sub> and mixed phases containing CrO<sub>2</sub> with a rutile or polyrutile structure are ferromagnetic and act as catalyst for the vapor phase oxidation of HCl with O-containing gases, of SO<sub>2</sub> to SO<sub>3</sub>, of NH<sub>3</sub> to N oxides, of hydrocarbons, of H to H<sub>2</sub>O, of alcs. to aldehydes and ketones, and for the oxy-chlorination of organic compds. With HCl and O or O-containing gases. The mixed phases contain up to 50% of a divalent metal fluoride, of oxides and fluorides of metals with valencies 1, 2, and 3, of oxides of metals with valencies 5 and 6, of mixts. of divalent metal fluorides with oxides and fluorides with valencies 1, 2, and 3, or of mixts. of oxides of metals with valencies 5 and 6 with oxides of metals with valency 4. Oxides and fluorides of Cu, Na, Mg, Zn, Mn, Fe, Co, Ni, Pd, Al, Ga, Ti, As, Sb, V, Nb, Ta, Rh, Sc, In, Ge, Pb, Te, Rn, Os, Ir, Sn, Zr, Hf, Bi, Mo, W, and U, with cations with radius 0.46-0.91 Å, are accommodated in the rutile lattice of CrO<sub>2</sub>, and must be present in amts. so that the ratio of cations to anions is 1:2. Mixed phases are prepared by mixing CrO<sub>3</sub> with the oxides or fluorides to be incorporated or with compds. forming oxides, e.g. carbonates, nitrates, or hydroxides, under hydrothermal conditions at 250-350° and 100-300 atmospheric, preferably under an inert atmospheric. Relatively small CrO<sub>2</sub> or mixed phase particles are first prepared and are then grown to the required size in subsequent stages. CrO<sub>3</sub> modified by Sb<sub>2</sub>O<sub>3</sub> is prepared by heating CrO<sub>3</sub> with finely divided Sb or Sb compds. with H<sub>2</sub>O or LiNO<sub>3</sub> to 250-400° for 1-3 hrs. at 1-3000 atmospheric CrO<sub>2</sub> precipitated on fibrous TiO<sub>2</sub>, glass, or Al<sub>2</sub>O<sub>3</sub> is obtained by decomposing CrO<sub>2</sub>Cl<sub>2</sub> at 350-500° and 0.5-5 atmospheric. Various particle sizes of the catalyst can be used in a fixed or fluidized bed, or the catalyst may be deposited on a carrier, e.g. Al<sub>2</sub>O<sub>3</sub>, pumice, clay, zeolite, SiO<sub>2</sub> gel, SiC, diatomaceous earth, asbestos, kaolin, or a filler may be added, e.g. K<sub>2</sub>SO<sub>4</sub>, K<sub>2</sub>S<sub>2</sub>O<sub>7</sub>, ZrO<sub>2</sub>, ThO<sub>2</sub>, or BaSO<sub>4</sub>. The catalyst may be used combined with other oxidation catalyst. In an example, 1.19 g. CrO<sub>3</sub> was well mixed with 20 ml. H<sub>2</sub>O. The mixture was heated 1/2-8 hrs. in a steel container in an autoclave over H<sub>2</sub>O to 280° and 200 atmospheric. After cooling, the product was powdered and washed until chromate-free with distilled H<sub>2</sub>O, filtered, and dried at 105°, giving 825 g. CrO<sub>2</sub>. By mixing 1.19 g. CrO<sub>3</sub> with 80 g. Sb<sub>2</sub>O<sub>3</sub>, Sb<sub>2</sub>O<sub>4</sub>, Sb, or Sb<sub>2</sub>O<sub>5</sub> and 20 ml. H<sub>2</sub>O and similar treatment, 1063 g. of an Sb-doped CrO<sub>2</sub> was obtained, which was used for 600 hrs. at 340° as catalyst for the oxidation of HCl with O. With 64 l. HCl/hr./l. catalyst the yield was 76.4 ± 0.4%. After 600 hrs. the catalyst activity had not decreased.

ACCESSION NUMBER: 1968:81739 CAPLUS  
DOCUMENT NUMBER: 68:81739  
TITLE: Chromium dioxide as an oxidation catalyst  
INVENTOR(S): Mund, Franz  
PATENT ASSIGNEE(S): Farbenfabriken Bayer A.-G.  
SOURCE: Ger., 11 pp.  
CODEN: GWXXAW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1252180		19671019	DE	19650707
FR 1545704			FR	
GB 1202234			GB	

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AB Electrodes, especially for fuel cells, are prepared by mixing a powdered Pd Raney alloy with powdered Ni, Ag<sub>2</sub>CO<sub>3</sub>, and a pore former and compressing and sintering the mixture and dissolving of the soluble components of the Raney alloy. As the Raney alloy, PdAl<sub>3</sub> or PdAl<sub>4</sub> may be used. As pore formers, NH<sub>4</sub>HCO<sub>3</sub>, NaHCO<sub>3</sub>, and Na<sub>2</sub>CO<sub>3</sub> are mentioned. The Ag, formed by decomposition of the Ag<sub>2</sub>CO<sub>3</sub> during sintering, prevents the reaction between the Ni and the Raney alloy so that durable electrodes are formed that are resistant to air and can be dried. The electrodes can be used for the electrochem. combustion of H and for the conversion of dissolved fuels such as MeOH and glycol; because of their great capacity of sorption of H, they can be used as secondary cells. For example, a Raney catalyst is prepared by mixing powdered Pd and powdered Ni in an atom ratio of 1:4 and, after compression, heating in Ar or H at 100°. After powdering, the PdAl<sub>4</sub> is sieved and the 25-40 fraction is used. An electrode is prepared by mixing PdAl<sub>4</sub> 35, Na<sub>2</sub>CO<sub>3</sub> 20, Ag<sub>2</sub>CO<sub>3</sub> 25, and Ni carbonyl 20 volume %. First Ag<sub>2</sub>CO<sub>3</sub> and Ni carbonyl are mixed; then the other components, which have not been powdered beforehand, are added and the mixture is powdered. From 20 g. of the mixture, a pellet is pressed and coated with 33 g. of a mixture of Ni carbonyl 60 and Na<sub>2</sub>CO<sub>3</sub> 40 volume%. Preferably, a subcoating of Na<sub>2</sub>CO<sub>3</sub> 30, Ag<sub>2</sub>CO<sub>3</sub> 35, and Ni carbonyl 35 volume % is applied. 1st. After compression and sintering at 600°, the electrode formed is quenched in 6N NaOH at 90°, in which Al dissolves. When the electrode is tested in a cell, with glycol dissolved in KOH as the fuel, with a c.d. of 200 ma./cm.<sup>2</sup> at 70°, the electrode has a voltage of 300 mv. vs. a H electrode in the same electrolyte.

ACCESSION NUMBER: 1968:65215 CAPLUS  
DOCUMENT NUMBER: 68:65215  
TITLE: Manufacture of electrodes  
INVENTOR(S): Sandstede, Gerd; Blinder, Horst; Koehling, Alfons; Richter, Kurt  
PATENT ASSIGNEE(S): Bosch, Robert, G.m.b.H.  
SOURCE: Fr., 4 pp.  
CODEN: FRXXAK  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1484144		19670609		
DE 1546695			DE	
GB 1148512			GB	
PRIORITY APPLN. INFO.:			DE	19650720

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AB The membrane consists of a layer of catalytic material (Ni, Pd, Pt, W, Mo, Fe, or their alloys) which catalyzes the chemisorptive dissociation of H<sub>2</sub> mols. into H atoms and a 2nd layer of nonporous noncatalytic material (Au, Ag, steel, stainless steel, Fe, Ni) which is nonpermeable to H<sub>2</sub> mol. The layers can be placed on supporting materials (glass, ceramics, refractory material, porous polymers) which are porous to H<sub>2</sub> mol. and can be separated by an intermediate layer (0.5-10 mils thick). In operation, the catalytic layer is heated to 300-1000° and the 2nd layer is maintained at lower temperature. The H<sub>2</sub> is passed through the catalytic layer at elevated pressure. Thus, a Pd thimble coated with Ni (0.005 in. thick) is heated to 500° and H<sub>2</sub> is introduced into the thimble at a pressure of 100-200 psig. After evaporation, no decrease in H<sub>2</sub> pressure on the exterior side of the thimble is observed. The membranes are relatively inexpensive and prevent back diffusion of dissociated H<sub>2</sub> when the pressure gradient across the membrane varies. The membranes can be used in purification and separation of H<sub>2</sub>, diffusion cells, and fuel cells.

ACCESSION NUMBER: 1968:41417 CAPLUS  
DOCUMENT NUMBER: 68:41417  
TITLE: Irreversible hydrogen membrane  
INVENTOR(S): Merrill, Robert P.; Crowley, Richard P.  
PATENT ASSIGNEE(S): Abcor, Inc.  
SOURCE: U.S., 4 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3344582		19671003	US	19641221

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AB Straight-chain hydrocarbons are selectively hydrocracked with a crystalline aluminosilicate zeolite having uniform pore openings of .apprx.5 Å. The zeolite should have the major portion of its cation content supplied by Zn<sup>++</sup>. A hydrogenation component containing a Group VIII metal is added. For example, 500 g. Na Zeolite A having pore diams. of .apprx.4 Å. and a SiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> ratio of 2:1 was suspended in 2000 g. H<sub>2</sub>O and a solution of 1 lb. ZnCl<sub>2</sub> in 500 cc. H<sub>2</sub>O was added slowly. After agitating for 4 hrs., the suspension was allowed to settle and the mother liquor removed by filtration. The procedure was repeated twice more and the product was washed with water by reslurrying in 2000 cc. H<sub>2</sub>O for 1 hr. and filtered. The washing step was repeated twice and the product dried. The product contained Na 0.83, Zn 20.8, SiO<sub>2</sub> 38.1, and Al<sub>2</sub>O<sub>3</sub> 30.8% by weight. An ammoniacal PdCl<sub>2</sub> solution (113 cc.) having a Pd content of 37.5 mg./cc. was added to 500 g. of product suspended in H<sub>2</sub>O. After drying, the product had a Pd content of 0.89% and was then pelleted and heated in H to 850°F. A feed stock of heavy coker naphtha usually not responsive to octane improvement by reforming was treated with the above catalyst. The research octane number of the C<sub>5</sub>+ product (with 3 cc. Et<sub>4</sub>Br) was increased from 49.8 to 86.7.

ACCESSION NUMBER: 1968:4637 CAPLUS  
DOCUMENT NUMBER: 68:4637  
TITLE: Selective hydrocracking of naphtha with aluminosilicate zeolites  
INVENTOR(S): Arey, William F., Jr.; Hamner, Glen P.; Mason, Ralph Burgess  
PATENT ASSIGNEE(S): Esso Research and Engineering Co.  
SOURCE: U.S., 8 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3331767		19670718	US	19650401

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 AB Mixts. of PtO<sub>2</sub> with Fe, Co, Ni, or Cu oxides and oxide mixts. of Pd containing Co or Ni over a range of compns. were used to hydrogenate catalytically PhNO<sub>2</sub> (6 volume % in MeOH), 2-methylbut-3-yn-2-ol (7.5 volume % in MeOH), and cyclohexene (17 volume % in MeOH) at 30° and 1 atmospheric pressure of H<sub>2</sub>. The oxides were reduced quickly at the start of the hydrogenation reaction. Curves demonstrate the rate of H<sub>2</sub> consumption vs. percent of base metal in the mixts. PtO<sub>2</sub> with Cu, Ni, or Co oxides showed a maximum rate of PhNO<sub>2</sub> hydrogenation approx. 3 times the rate for PtO<sub>2</sub> alone. The same mixts. provided a 50-80% rate increase in hydrogenating methylbutynol over PtO<sub>2</sub> alone. The maximum occurred at 1% base metal and fell rapidly with increased percentages. The maximum rate with Fe was at 5% and declined slowly with increased Fe. Cyclohexene hydrogenation with Pt containing Ni or Co showed a maximum at 2.5-3% base metal and was approx. 3 times the rate of Pt alone. Pd-Ni mixed oxides showed a broad maximum at 5-15% base metal on both PhNO<sub>2</sub> and methylbutynol, the maximum rates being 50 and 250% greater, resp., than with Pd alone. Pd-Co mixed oxides had 2 maximum, viz. 3 and 25% base metal, on both PhNO<sub>2</sub> and methylbutynol. Inasmuch as the Brunauer-Emmett-Teller areas decrease with increase in base metal, it is thought the increased hydrogenation activity is caused by some solid solution of base metal in the noble metal.  
 ACCESSION NUMBER: 1967:436708 CAPLUS  
 DOCUMENT NUMBER: 67:36708  
 TITLE: Catalytic activity of reduced noble metal-base metal mixed oxides  
 AUTHOR(S): Bond, Geoffrey C.; Webster, Dennis E.  
 CORPORATE SOURCE: Johnson Matthey Co. Ltd., Wembley, UK  
 SOURCE: Chemistry & Industry (London, United Kingdom) (1967), (21), 878-9  
 CODEN: CRINAG; ISSN: 0009-3068  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

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 AB of catalyst. The trans-isomerization degree, Tr, defined as the amt. of trans-oleic acid formed in hydrogenation of I to a standard edible product having an I no. of 75 was proportional to the amt. of linoleic acid glycerides hydrogenated. The ratio of trans and cis isomers of oleic acid followed the Arrhenius equation, the apparent activation energy of the isomerization being 5 ± 1 kcal./mole. Principles of modeling of the hydrogenation reactions are presented. 55 references.  
 ACCESSION NUMBER: 1967:77238 CAPLUS  
 DOCUMENT NUMBER: 66:77238  
 TITLE: Continuous hydrogenation of fats during vigorous mixing  
 AUTHOR(S): Zhubanov, K. A.; Sokol'skii, D. V.; Kuidina, V. P.; Bizhanov, F. B.  
 SOURCE: Trudy Instituta Khimicheskikh Nauk, Akademiya Nauk Kazakhskoi SSR (1966), 14, 129-58  
 CODEN: TIKNAG; ISSN: 0568-5087  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

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 AB of. CA 60, 15056h. The literature data concerning the effects of stirring, temperature, catalyst concentration, H pressure, and solvents added on the hydrogenation of oils are reviewed. Sunflower oil (I) was hydrogenated in the presence of com. Ni-Cu (II) and Ni-Cr (III) catalysts and of a 0.2% Pd/Al<sub>2</sub>O<sub>3</sub> catalyst (IV) in a 0.75-1. autoclave fitted with a propeller stirrer, apparatus for continuous introduction of H, and synchronously operated pumps for feeding a fresh mixture of I and II, III, or IV and for discharging the raw product. The reaction-rate constant, K, was calculated from the relation  $K = 1/\tau \ln$  (iodine number initial/iodine no. end), where  $\tau$  is the contact time. The reaction rate was directly proportional to the intensity of stirring in the Re region 20,000-45,000, but constant in the Re region 45,000-60,000 (Re = Reynolds number). The hydrogenation of I on II at 230°, H pressure 3 kg./cm.<sup>2</sup>, feed rate 1.2 l./hr., a ratio of 3 g. II/kg. I, and a stirring intensity in the Re region 40,000-60,000 gave products having standard m. ps. and hardnesses. Hydrogenation on III at 220°, a H pressure of 4 kg./cm.<sup>2</sup>, a ratio of 3 g. III/kg. I, a feed rate of 1 of 1.2 l./hr., and a stirring intensity in the Re range 45,000-60,000 (or at feed rate of 1 l./hr. I and a stirring intensity of Re = 31,000) gave products of standard quality, the content of trans acids being a little lower for higher Re values. Hydrogenation on IV at 200°, H pressure 10 kg./cm.<sup>2</sup>, 4 g. IV/kg. I, and I feed rate of 1.2 l./hr., and a stirring intensity of 45,000-60,000 Re gave products characterized by comparatively high m.ps. due to a high content of trans acids. The reaction rate for II, III, and IV followed the Arrhenius equation with activation energies of 10 ± 2, 10 ± 2, and 7 ± 1 kcal./mole, the temperature ranges studied being 170-230°, 160-220°, and 140-200°, resp. The reaction rate was directly proportional to the amount of catalyst and to the H pressure up to 4, 4, and 7 kg./cm.<sup>2</sup>, resp. An increase in pressure between 4 and 8 kg./cm.<sup>2</sup> for II increased the content of linoleic acid glycerides and the m.p. of the product above standard levels. Continuous hydrogenation of I and cottonseed oil (V) with addition of equal amts. of 96% EtOH or C<sub>6</sub>H<sub>14</sub> was studied for II, III, and 2% Pd/Al<sub>2</sub>O<sub>3</sub> (VI) as catalysts. The reaction followed the Arrhenius equation with an apparent activation energy of 10 ± 2 kcal./mole. The products obtained on II or III contained only small amts. of iso acids. V was hydrogenated more readily than I. Hydrogenation on VI was accompanied by trans isomerization giving thus products of above-standard hardness and m.p. The selectivity as defined by the ratio of the hydrogenation rate for the linoleic and oleic acid glycerides was independent on the iodine number down to the value of 73 [for the selectivity determination (CA 63, 11884h)]. The temperature dependence of the selectivity satisfied the relation  $S = \exp[1.1(T - T_0)/TT_0]$ , where T, T<sub>0</sub> and S, S<sub>0</sub> denote the corresponding absolute temperature and selectivity values. The selectivity dropped with increasing H pressure, increasing intensity of stirring, and also with increasing amount

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 AB The activity of alumina-supported Pt, Pd, Ni, Co, and Cu catalysts for the isomerization of dimethylbutenes was studied at 250°. All catalysts lost activity during reaction but could be reactivated by successive treatment with O and H at 300°, or by treatment with H alone at 400°. A Co-alumina catalyst showed only a slow loss of activity and was used to study the equilibrium between the isomeric dimethylbutenes and the methylcyclohexenes. For the isomerization of 2,3-dimethyl-1-butene to 2,3-dimethyl-2-butene, conversion approached the equilibrium values between 100 and 400°. Above 400°, cracking and skeletal isomerization was found. Equilibrium yields of methylcyclohexenes were observed on this catalyst at 250°. Disproportionation of methylcyclohexene into toluene and methylcyclohexane predominated on Pt and Pd catalysts but it was negligible on Co-alumina.  
 ACCESSION NUMBER: 1967:37482 CAPLUS  
 DOCUMENT NUMBER: 66:37482  
 TITLE: Isomerization of olefins on metallic catalysts  
 AUTHOR(S): Maurel, Raymond; Guisnet, Michel; Marcq, Michel; Germain, Jean E.  
 CORPORATE SOURCE: Fac. Sci., Lille, Fr.  
 SOURCE: Bulletin de la Societe Chimique de France (1966), (10), 3082-5  
 CODEN: BSCFAS; ISSN: 0037-8968  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French

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 AB The polarization characteristics of various combinations of HCO<sub>2</sub>H, N<sub>2</sub>H<sub>4</sub>, MeOH, and various mono-, di-, tri-, and polyhydric saturated alcs., resp., with electrodes made of Au, Ag, Pt, Pd, Ni, and Cu catalyst metals are reviewed.  
 ACCESSION NUMBER: 1966:454278 CAPLUS  
 DOCUMENT NUMBER: 65:54278  
 ORIGINAL REFERENCE NO.: 65:10112e  
 TITLE: Fuel electrodes of liquid fuel cells  
 AUTHOR(S): Yamano, Masaru; Ikeda, Hironosuke  
 CORPORATE SOURCE: Res. Develop. Center, Sanyo Elec. Co., Ltd., Osaka, Japan  
 SOURCE: Hydrocarbon Fuel Cell Technol., Symp., Am. Chem. Soc., Atlantic City (1965) 169-84  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

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 AB The crude gasolines obtained in the high-temperature cracking of crude oils or oil cuts can be refined by selective hydrogenation over a Co-base catalyst to a high-octane-rating, high-induction period, and diolefin-, styrene- and methylstyrene-free gasoline. The refining process is based on high-temperature and high-pressure hydrogenation in the presence of a catalyst containing Co on a carrier with a large surface area. This catalyst makes it possible to process gasolines containing 55000 ppm. S with better life cycles than with other known types of catalysts (containing Ni, Pd, or Pt). It is possible to regenerate and hydrogenate gases containing CO. Addition of 15% Cu to the Co improves the duration and decreases the temperature of reduction of the catalyst, while addition of molybdic acid decreases the sensitivity of Co toward aliphatic or aromatic mercaptan S. As catalyst carriers, Zr, Ti, Mg, or Zn silicates or their mixts, and active Al<sub>2</sub>O<sub>3</sub> may be used. The catalysts are obtained by addition of an aqueous solution of Na silicate and Na molybdate (containing 0.25-2.5 moles Si, with a Na/Si ratio of 0.67-6.5/1 and with a Mo/Si ratio of 0.01-0.5/1) to a solution of Co salt (containing 1-3 moles of nitrate, chloride, or acetate). The solution (pH 6-8) must have a Co content equal to or 10% lower than the equivalent Na content. The precipitate is filtered, washed, dried at 100-150°, tabletted, and calcined at 400-500°. The Na/Si ratio necessary to obtain the desired Co content may be controlled by addition of NaOH or Na<sub>2</sub>CO<sub>3</sub>. The Co salt may be partially replaced by equivalent amts. of S-free Mg or Zn salts so that the Mg/Zn or Mg/Si ratios are ≤ 1:1. Before use, the catalysts must be reduced with H or gases containing H at 200-350°. Selective refining of the crude gasoline is obtained by downflow processing of the preheated gases and liquid feed through a static bed of catalyst followed by separation of the reaction products. As feed gases, residual streams from reforming or pyrolysis plants may be used with a H content of >50 volume %. The reaction pressure corresponds to a H partial pressure of 15-30 atmospheric. The increase of the temperature due to the reaction may be 50-250° and it is kept at the desired level by quenching cold gasoline or gases into the reactor. Space velocities of 0.5-5 kg. gasoline/l. of catalyst/hr. may be used and the feed gas/gasoline ratio must be >100 l./kg. The catalyst may be regenerated at 400-500° with a preheated H<sub>2</sub>O vapor-air mixture. The performance of the process is observed from inspection of the induction period of the refined gasoline, which must be >240 min. and by the octane rating, which must be unaffected by the process. For example, aqueous solns. of 256 g./l. Mg(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O, of 232 g./l. (38° Be.) tech. Na silicate, and of 50 g./l. NaOH were mixed at 35°. To the suspension, heated to 55°, a solution of 340 g. Co(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O in 2 l. H<sub>2</sub>O and an aqueous solution of 140 g. Na<sub>2</sub>CO<sub>3</sub>/l. were added. The precipitate (pH 7.2-7.5) was filtered for 0.5 hr., washed until all the nitrate was

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 eliminated, dried at 120°, compressed to pills, and calcined at 500° during 15 hrs. The final catalyst (I) contained CoO 40.3, SiO<sub>2</sub> 31.3, and MgO 18.6% by wt., the remainder being bound H<sub>2</sub>O. Before use, the catalyst was reduced with H at 350° during 24 hrs. The prepn. of a catalyst (II) with a final compn. of SiO<sub>2</sub> 47.5, CoO 30.0, MoO<sub>3</sub> 8.8, and CuO 3.5 wt. % is described.

I and II were compared with known types of catalysts, such as Co without a carrier (III) and Ni on γ-Al<sub>2</sub>O<sub>3</sub> carrier (IV), under identical reaction conditions: 25 atm., space velocity 1.5 kg./l. hr., 105°, and feed gas/liquid ratio 200 l./kg. After 720 hrs. on stream, the refined gasoline had the properties indicated in the table. Products with different catalysts: Properties, Crude feed, I, II, III, IV; Br no., g./100 g., 68, 53, 52, 54, 48; Diene no., g./100g., 35, 0, 0, 6, 1; Styrene + methylstyrene, wt. %, 3, 0.1, 0.1, 0.8, 0.3; Induction period, min. (ASTM D: 525-55), 45, 380, 360, 180, 270; Research octane no., clear, 94, 93.8, 94, 93.5, 93;  
 ACCESSION NUMBER: 1966:428704 CAPLUS  
 DOCUMENT NUMBER: 65:28704  
 ORIGINAL REFERENCE NO.: 65:5281d-h, 5282a-b  
 TITLE: Selective refining by hydrogenation of pyrolysis gasolines  
 INVENTOR(S): Nonnenmacher, Helmut; Lorenz, Ernst; Wodtcke, Friedrich; Reitz, Ortwin  
 PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik A.-G.  
 SOURCE: 13 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 666651		19660110	BE	
FR 1438985			FR	
PRIORITY APPLN. INFO.:			DE	19640711

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 AB The catalytic reactions of Me<sub>2</sub>NH<sub>2</sub>, Me<sub>2</sub>NH, and Me<sub>3</sub>N, and ethylenimine have been studied in the presence of H over a variety of evaporated metal films. There was evidence for the incorporation of C into the catalyst with Pt, Pd, Ni, W, and Co and for the incorporation of N with V. Electron diffraction examination showed the presence of carbide phases with Ni, Co, and W and a sep. nitride phase with V. No separate carbide phases could be detected with Pd and Pt. Me<sub>2</sub>NH<sub>2</sub> and Me<sub>2</sub>NH each reacted in 2 distinct ways: (i) simple hydrocracking and (ii) other reactions, of which the most important was a disproportionation involving 2 amine mols. Some ethylenimine and MeCN were formed during the reaction of Me<sub>2</sub>NH<sub>2</sub> over W, Co, V, and Cu, and during the reaction of Me<sub>2</sub>NH over W and Co. Small amts. of hydrocarbons in the range C<sub>2</sub>-C<sub>4</sub> were also found in most cases. Under the conditions used, Ni was the metal most to favor hydrocracking, while Pd and Pt favored disproportionation. Over Ni and Pd the rate of hydrocracking of Me<sub>2</sub>NH<sub>2</sub> was close to zero order in amine pressure, while disproportionation was close to second order. Me<sub>3</sub>N reacted over Pd with hydrocracking as the only primary process and Me<sub>2</sub>NH was the most abundant product. The presence of 13CH<sub>4</sub> or 15NH<sub>3</sub> in the Me<sub>2</sub>NH<sub>2</sub> reaction mixture did not result in the incorporation of 13C or 15N in the disproportionation product, nor was there any exchange with the parent amine. Furthermore, reaction of a mixture containing 13CH<sub>3</sub>NH<sub>2</sub> and CH<sub>3</sub>15NH<sub>2</sub> did not result in a direct exchange reaction. From these data and from the observed pressure dependence it is concluded that the most likely mechanism for disproportionation is by a surface bimol. reaction between adsorbed amine residues. The main reaction of ethylenimine was ring opening by rupture of a C-N bond, the product of this being EtNH<sub>2</sub> over Pt and Pd, MeCN over Co, V, and Cu, and a mixture of both over Ni and W. Appreciable amts. of C<sub>3</sub> and C<sub>4</sub> amines were also produced, particularly over Ni, W, Co, and V.  
 ACCESSION NUMBER: 1966:92715 CAPLUS  
 DOCUMENT NUMBER: 64:92715  
 ORIGINAL REFERENCE NO.: 64:17381d-g  
 TITLE: Reactions of aliphatic amines over evaporated metal films  
 AUTHOR(S): Anderson, J. R.; Clark, N. J.  
 CORPORATE SOURCE: Univ. Melbourne  
 SOURCE: Journal of Catalysis (1966), 5(2), 250-63  
 CODEN: JCTJAS; ISSN: 0021-9517  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 446 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title compds. are prepared by liquid-phase oxidation of paraffinic and aliphatic-aromatic compds. at an elevated temperature and pressure in the presence of a solid catalyst, e.g. an oxide of V, W, or Mo on an Al2O3 carrier. The product yield is improved by carrying out the oxidation in the presence of a metal, e.g. Pt, Pd, Ni, or Ag.  
 ACCESSION NUMBER: 1966:59675 CAPLUS  
 DOCUMENT NUMBER: 64:59675  
 ORIGINAL REFERENCE NO.: 64:11133d-e  
 TITLE: Carboxylic acids  
 INVENTOR(S): Toffe, I. I.; Klimova, N. V.  
 PATENT ASSIGNEE(S): Scientific-Research Institute of Organic Intermediates and Dyes  
 SOURCE From: Byul. Izobret. i Tovarnykh Znakov 1965(22), 27..  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 176287		19651102	SU	19631212

L38 ANSWER 447 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB To increase the product yield and decrease the contact time of the reacting components in the reaction of B halides with H and olefins at 350-90°, Pt, Ru, Pd, Ni, Cu, or ZnCl2 on activated C is used as a catalyst.  
 ACCESSION NUMBER: 1966:36026 CAPLUS  
 DOCUMENT NUMBER: 64:36026  
 ORIGINAL REFERENCE NO.: 64:6692f  
 TITLE: Alkylboron dichlorides  
 INVENTOR(S): Gorbunov, A. I.; Kurekova, A. T.; Antonov, I. S.; Zhigach, A. F.  
 SOURCE From: Byul. Izobret. i Tovarnykh Znakov 1965(21), 18..  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 175959		19651026	SU	19640518

L38 ANSWER 448 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB At least one of the electrodes is coated with a porous layer of refractory, e.g. MgO, Al2O3, ZrO2, which is impregnated with a catalyst, e.g. Pd. The electrodes are tubular, parallel, and concentric. The refractory layer may be applied by an oxyacetylene plasma torch, layers of metal or alloy being applied alternately with those of refractory, the proportions of the 2 being varied from 0 to 100% from the inception to the end of the operation of application. The metal layer may be selected from the group of Ag, Au, Pt, Ni, Pd, or alloys thereof. The electrodes may be formed in a cylindrical mandrel.  
 ACCESSION NUMBER: 1966:25086 CAPLUS  
 DOCUMENT NUMBER: 64:25086  
 ORIGINAL REFERENCE NO.: 64:4601c-d  
 TITLE: New fuel cell  
 INVENTOR(S): Salvadori, Andre A.; Levy, Philippe R.; Beigelman, Michel P.; Le Bras, Claude R.; Guillot, Gerard N.  
 PATENT ASSIGNEE(S): Gaz de France  
 SOURCE: 18 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 660567		19650903	BE	
NL 6505393			NL	
PRIORITY APPLN. INFO.:			FR	19640430

L38 ANSWER 449 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Electrolytic gas generators for the production of O by the electrolysis of H2O, as described by White and Work (U.S. 2,951,802, CA 55, 17313a), can be operated with lower power requirements by using paired plate electrodes, one of which is Cd-active and the other is made from sintered Ni-Pd alloy containing 0.1-2 weight % Pd. The generator has 2 cells or banks of cells, with one cell or bank charging while the other is discharging. In the charging cell, Cd(OH)2 is reduced to Cd at the cathode and O is evolved at the Ni-Pd anode, the net reaction being Cd(OH)2 + Cd + H2O + O. In the discharging cell, Cd is converted back to the hydroxide with evolution of H, the net reaction being Cd + 2H2O + Cd(OH)2 + H2. In the discharge phase, the Pd of the Ni-Pd cathode is, in part, converted to Pd black which forms a film on the surface of the electrode. The Pd black is a better catalyst for the electrolytic H producing reaction than the Ni of the conventional Ni plated iron or steel electrode. This catalysis directly affects the polarization of the cathode; the H overvoltage is reduced with a consequent reduction in the sp. power consumption at a given c.d. The porous Ni-Pd electrode is as effective as one of pure Pd. A Ni-Pd electrode with 2 weight % Pd reduces the H overvoltage by as much as 0.3 v. for a cell with an operating potential of 2.2 v. This gives a material reduction in power consumption and consequently an increase in operating efficiency.  
 ACCESSION NUMBER: 1966:16945 CAPLUS  
 DOCUMENT NUMBER: 64:16945  
 ORIGINAL REFERENCE NO.: 64:3064c-e  
 TITLE: Electrolytic gas generator  
 INVENTOR(S): White, Joseph C.; Schuldiner, Sigmund  
 PATENT ASSIGNEE(S): U.S. Dept. of the Navy  
 SOURCE: 4 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3216919		19651109	US	19610504

L38 ANSWER 450 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Reactions of HCN were studied on evaporated films of Pt, Pd, Ni, W, Co, V, and Cu. The cyanide was strongly adsorbed and there was evidence for inhibition of the D2/H2 exchange. Exchange of D2 with HCN occurred, probably by dissociative adsorption of the HCN, but the D content of the surface was far below that of the gas phase. At temps. above those for the exchange reactions, hydrogenation of HCN occurred at rates similar to those for methylamine hydrogenation and to give generally comparable products. Except with Pt, methylamine was not a major product from HCN hydrogenation: NH3, CH4, di- and trimethylamine, ethylamine, methyl cyanide, and hydrocarbons of C2 and above were found. The mechanism of these reactions is discussed. Extensive incorporation of C and sometimes N into the catalyst occurred.

ACCESSION NUMBER: 1965:469054 CAPLUS  
DOCUMENT NUMBER: 63:69054  
ORIGINAL REFERENCE NO.: 63:12665f-h  
TITLE: Reactions of hydrogen cyanide over evaporated metal films  
AUTHOR(S): Anderson, J. R.; Clark, N. J.  
CORPORATE SOURCE: Univ. Melbourne  
SOURCE: Proc. Intern. Congr. Catalysis 3rd, Amsterdam 1964 (1965), 2, 1048-62, discussion 1062-3  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L38 ANSWER 451 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB O is electrolytically separated from impure gas mixts. The mixture is introduced first into a zone with a neg. electrode with at least 1 active catalytic metal and then to a 2nd zone containing a liquid electrolyte. The electrolyte containing the O is then put in contact with a pos. electrode with at least 1 active catalytic metal. The pure O collecting there is led to a 3rd zone to be recovered. The electrolyte can be an acid, an aqueous solution of H2SO4, H3PO4, HClO4, or an alkali, an aqueous solution of KOH, or NaOH. The potential is 0.1-1.5 v. The electrode can contain Pt, Pd, Ni, or Ag. The gaseous mixture contains O and N in a 20:80 volume ratio. In one example a sheetlike electrode is obtained by applying on a 0.074-mm.-mesh steel wire gauze a mixture of 80% Pt black, 7% colloidal silica, and 13% poly(tetrafluoroethylene) giving a Pt charge of 11.3 mg./sq. cm. The electrode is then formed at a pressure of 21 kg./sq. cm. at 320°. The sheet is then treated with an aqueous solution of 23% KOH and washed with H2O. Two electrodes are cut out of the sheet. Five disks of filter paper are then saturated with a 23% KOH solution (electrolyte) and placed between the 2 electrodes which are then connected to a voltage source. The active surface of each electrode is 4.9 sq. cm. The cell has a 0.44 ohm resistance. Pure O is passed through at 0.564 v. and a current of 20 ma. Spectroscopic analysis of a sample of purified O showed a purity of at least 96%.

ACCESSION NUMBER: 1965:452192 CAPLUS  
DOCUMENT NUMBER: 63:52192  
ORIGINAL REFERENCE NO.: 63:9466e-g  
TITLE: Electrolytic process for the purification of oxygen  
INVENTOR(S): Langer, Stanley H.; Haldeman, Robert G.  
PATENT ASSIGNEE(S): American Cyanamid Co.  
SOURCE: 7 pp.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1386878		19650122	FR	
BE 645698			BE	
GB 1039412			GB	
PRIORITY APPL. INFO.:			US	19630620

L38 ANSWER 452 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB A liquid phase reaction of acetone and H at elevated temperature and pressure in the presence of a dual catalyst system of a acidic cation-exchanger and a catalyst selective for hydrogenation of ethylenic bonds gave high yields of Me iso-Bu ketone (I) and greatly decreased production of by-products. Thus, 1 l. acetone, 500 cc. Dowex 50W-X8 (H+ form), and 20 g. Pd-C (2 g. Pd on 18 g. C) with H at 2.5 atmospheric were heated to 75° and initial H absorption began. The mixture was heated at 130° and 10 atmospheric for 4 hrs. The cooled, filtered reaction mixture contd. 44.9% by weight I. Distillation of 722 g. at 114-17° gave 283 g. I. Yields were higher with 1 part resin/1 part acetone and at 145°. A continuous reactor was described in which acetone at 1001 cc./hr. was passed counter-currentwise to the H stream at 90 l./hr. over a bed of Dowex 50W-X8 and 5% Pd-C in 6 mm. tablets. The effluent stream contd. 35 weight % I.

ACCESSION NUMBER: 1965:445769 CAPLUS  
DOCUMENT NUMBER: 63:45769  
ORIGINAL REFERENCE NO.: 63:8203d-f  
TITLE: Preparation of methyl isobutyl ketone from acetone  
PATENT ASSIGNEE(S): Rheinpreussen A.-G. fuer Bergbau und Chemie  
SOURCE: 4 pp.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 994137		19650602	GB	
PRIORITY APPL. INFO.:			DE	19630629

L38 ANSWER 453 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The O transfer proceeds intramol. in the hydrogenation of o-O2NC6H4CN (I) over Raney Ni or Pt in EtOH to o-H2NC6H4CONH2 (II) at the stage of the o-HONHC6H4CN (III) which was readily cyclized in EtOH to 3-aminoanthranil (IV). IV was isolated as an intermediate and hydrogenated to give II. In the hydrogenation over Pd in dioxane, the cyclization to IV does not occur and o-H2NC6H4CN (V) is the hydrogenation product. This mechanism was confirmed by expts. with 18O labeled compds. and by kinetic measurements. The ir spectra of partially-deuterated preps. proved the structure of IV.

D2180 (95%) (63 mg.), 26 mg. I, and 2 mg. Na heated 3 hrs. at 140° in a sealed tube gave 8 mg. II-18O, m. 110-11°. D2180 (312 mg.) (containing 14.2% 18O), 102 mg. I, and 7 mg. Na gave similarly 41 mg. II, m. 111-12°. I (403 mg.) hydrogenated 20 min. at 20°/1 atmospheric over 50 mg. PtO2 in 50 cc. MeOH yielded 333 mg. II, m. 110.5-11.5° (C6H6-petr. ether); the yield was 83% with Raney Ni. I (450 mg.) in 80 cc. EtOH hydrogenated over 75 mg. poisoned Pd-BaSO4 catalyst (2.5 g. 5% Pd-BaSO4 shaken 1 hr. with 7 mg. thiourea in 2.5 cc. MeOH), and the product chromatographed on silica gel yielded 260 mg. V, m. 47-50° (H2O). I (185 mg.) in 30 cc. dioxane hydrogenated over 40 mg. PtO2 gave 30 mg. V, m. 48-50°, and 25 mg. II, m. 111-12.5°. 2,6-Me(O2N)C6H3CN (348 mg.) in 100 cc. MeOH and 50 cc. C6H6 hydrogenated 20 min. over about 1 g. Raney Ni gave 249 mg. 6,2-Me(H2N)C6H3CONH2, m. 137-8° (C6H6-MeOH and sublimed in vacuo at 95°). 3,2-Me(O2N)C6H3CN (30 mg.) in 40 cc. EtOH hydrogenated over 15 mg. PtO2 gave 19 mg. 3,2-Me(H2N)C6H3CONH2, m. 147-9° (C6H6-petr. ether). 8,1-O2NC10H6NH2 (3.0 g.) in 16 cc. concentrated HCl and 23 cc. H2O treated during 0.5 hr. with stirring and cooling with 1.5 g. NaNO2 in 7 cc. H2O, the mixture added with stirring during 10 min. at 70° to a mixture prepared by treating 4.2 g. CuSO4.5H2O in 30 cc. H2O dropwise at 60° with stirring with 4.7 g. KCN in 10 cc. H2O, and stirred 15 min. at 70°, and the product chromatographed on silica gel yielded 650 mg. 8,1-O2NC10H6CN (VI), m. 153-5° (C6H6-petr. ether), and 41% 1,8-ClC10H6NO2, m. 95° (C6H5cyclohexane). VI (250 mg.) in 60 cc. AcOEt hydrogenated over Raney Ni and the product chromatographed on silica gel gave 27 mg. naphthostyryl (VII), yellow, m. 182-4.5° (sublimed at 150°/1 mm.). VI hydrogenated over PtO2 in EtOH gave a brown product which was sublimed in vacuo to yield VII. I (1.0 g.) and 0.75 g. NH4Cl in 20 cc. 50% EtOH treated during 20 min. with 1.5 g. Zn dust in portions yielded 150 mg. IV, m. 110-14° (C6H6). I (1.0 g.) in 150 cc. EtOH hydrogenated under ambient conditions over 90 mg. PtO2 gave 70 mg. IV. I (49.4 mg.) in 20 cc. dioxane hydrogenated over 30 mg. PtO2 gave 20 mg. III, m. 83-5°; in dioxane over Pd-BaSO4 the yield was 59%. I (1.50 g.) in 75 cc. EtOH hydrogenated over 225 mg. poisoned Pd-BaSO4 yielded 440 mg. III, m. 82° (C6H6). III (50 mg.) heated 2 hrs. at 120° gave 26 mg. 2,2'-dicyanoazobenzene, yellow-red, m. 202-3° (C6H6) and 1.5 mg. o-H2NC5H4CONH2, m. 106-11° (C6H6-petr. ether). o-O2NC6H4CONH2 (0.75 g.) and 0.58 g. NH4Cl in 16 cc. 50% EtOH treated with stirring at 0° during 25 min. with 1.2 g. Zn dust in small portions gave 200 mg. o-HONHC6H4CONH2, m. 115-19° (C6H6-petr. ether). I (49.4 mg.) in 13.5 cc. dioxane, 2.5 cc. solution of 16 mg. CS(NH2)2 in 100 cc. dimg. II. The hydrogenations over 80 mg. 5% Pd-BaSO4 were performed in 13.8 cc. dioxane, 1.2 cc. solution of 16



L38 ANSWER 453 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 AB The low-temperature oxidation of SO<sub>2</sub> with O<sub>2</sub> on a carbonaceous adsorber to form finally H<sub>2</sub>SO<sub>4</sub> is catalyzed by certain metals and their compds. The metals which act as **catalysts** are Mn, Cu, Ru, Ni, Pd, Pt, Ti, Fe, Zn, Co, Sn, As, Cr, V, and Mo; in addition, I is also effective. The catalytic behavior of the adsorber does not decrease with time if the adsorbent is charged with the appropriate **catalyst**. If the **catalyst** is soluble in H<sub>2</sub>SO<sub>4</sub>, there must be 5 g. or more of the **catalyst** in a cu. m. of the water used to extract the SO<sub>3</sub> formed on the adsorbent **catalyst** present. If the **catalyst** is not soluble in H<sub>2</sub>SO<sub>4</sub>, there must be 50-500 g. of the metal or metal compound per 100 kg. of adsorbent.

H<sub>2</sub>SO<sub>4</sub> is produced from the SO<sub>2</sub> which is contained in the flue gases from a number of industrial processes.

ACCESSION NUMBER: 1965:422384 CAPLUS  
 DOCUMENT NUMBER: 63:22384  
 ORIGINAL REFERENCE NO.: 63:3926a-b  
 TITLE: Production of sulfuric acid  
 PATENT ASSIGNEE(S): Metallgesellschaft A.-G.  
 SOURCE: 5 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 994070		19650602	GB	
DE 1227434			DE	
PRIORITY APPLN. INFO.:			DE	19601017

indicated that the formation of II in the hydrogenation in EtOH occurred faster than the conversion of III to IV in pure EtOH; the conversion of III to IV is accelerated by Pt contact. The uv spectra of III and IV and the ir spectrum of IV are recorded.

ACCESSION NUMBER: 1965:431445 CAPLUS  
 DOCUMENT NUMBER: 63:31445  
 ORIGINAL REFERENCE NO.: 63:5557f-h,5558a-d  
 TITLE: Mechanism of the oxygen transfer in the hydrogenation of 2-nitrobenzonitrile to 2-aminobenzamide  
 AUTHOR(S): Musso, Hans; Schroeder, Horst  
 CORPORATE SOURCE: Univ. Marburg, Germany  
 SOURCE: Chemische Berichte (1965), 98(5), 1562-76  
 CODEN: CHREAM; ISSN: 0009-2940  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

L38 ANSWER 454 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The low-temperature oxidation of SO<sub>2</sub> with O<sub>2</sub> on a carbonaceous adsorber to form finally H<sub>2</sub>SO<sub>4</sub> is catalyzed by certain metals and their compds. The metals which act as **catalysts** are Mn, Cu, Ru, Ni, Pd, Pt, Ti, Fe, Zn, Co, Sn, As, Cr, V, and Mo; in addition, I is also effective. The catalytic behavior of the adsorber does not decrease with time if the adsorbent is charged with the appropriate **catalyst**. If the **catalyst** is soluble in H<sub>2</sub>SO<sub>4</sub>, there must be 5 g. or more of the **catalyst** in a cu. m. of the water used to extract the SO<sub>3</sub> formed on the adsorbent **catalyst** present. If the **catalyst** is not soluble in H<sub>2</sub>SO<sub>4</sub>, there must be 50-500 g. of the metal or metal compound per 100 kg. of adsorbent.

H<sub>2</sub>SO<sub>4</sub> is produced from the SO<sub>2</sub> which is contained in the flue gases from a number of industrial processes.

ACCESSION NUMBER: 1965:422384 CAPLUS  
 DOCUMENT NUMBER: 63:22384  
 ORIGINAL REFERENCE NO.: 63:3926a-b  
 TITLE: Production of sulfuric acid  
 PATENT ASSIGNEE(S): Metallgesellschaft A.-G.  
 SOURCE: 5 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 994070		19650602	GB	
DE 1227434			DE	
PRIORITY APPLN. INFO.:			DE	19601017

L38 ANSWER 455 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The effects of alloying Cu, Fe, or Pd with a thin Ni film used to catalyze the hydrogenation of C<sub>2</sub>H<sub>4</sub> have been studied. To obtain homogeneous alloy films, these were vacuum-evaporated from alloy pellets. In the absence of deliberately preadsorbed H, alloying Ni with Cu (diamagnetic) or Fe (ferromagnetic) produced only small changes in **catalyst** activity, however, Pd (paramagnetic) promoted the activity sharply. Deliberately preadsorbed H considerably promoted the activity of the Cu-Ni and Fe-Ni films, but not that of the Pd-Ni films. The effect of H is discussed in terms of Types A and C adsorption. Apparent activation energies ranged from 6 to 10 kcal./mole. Although the Pd-Ni **catalysts** were in several respects unique for all **catalysts** the reaction order was fractional, being pos. in H but negative in C<sub>2</sub>H<sub>4</sub>.

ACCESSION NUMBER: 1965:81845 CAPLUS  
 DOCUMENT NUMBER: 62:81845  
 ORIGINAL REFERENCE NO.: 62:14453h,14454a  
 TITLE: Hydrogenation of ethylene on induction-evaporated films of nickel and some nickel alloys  
 AUTHOR(S): Alexander, Earl G.; Russell, W. Walker  
 CORPORATE SOURCE: Brown Univ., Providence, RI  
 SOURCE: Journal of Catalysis (1965), 4(2), 184-93  
 CODEN: JCTLAB; ISSN: 0021-9517  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L38 ANSWER 456 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A basic study on the extraction or separation of metals which can be applied to the hydrometallurgical processes was made. Cu, Co, Ni, Pd, Fe, Zn, Cd, Bi, Ga, Pt, Pd, and Rh ions in HCl or HBr solution were extracted with solns. of amberlite IA-2, tri-laurylamine, or cyclohexyldidodecylamine in kerosene. Regardless of the kind of metallic ions, the tertiary amines were more powerful extractants than the secondary. By changing the acid concentration of the acidic solution of these metals the collection of Cd<sup>2+</sup> and Bi<sup>3+</sup>, separation of Ni<sup>2+</sup> and Co<sup>2+</sup>, of Ga<sup>3+</sup> from Zn<sup>2+</sup>, Cu<sup>2+</sup>, Cd<sup>2+</sup> and Bi<sup>3+</sup>, and of Rh<sup>3+</sup> from Pt<sup>4+</sup> and Pa<sup>2+</sup> were possible. Except the Pt group, the metals extracted in the organic phase were easily stripped with 0.5Nag. HNO<sub>3</sub> or Na citrate solution

ACCESSION NUMBER: 1965:80694 CAPLUS  
 DOCUMENT NUMBER: 62:80694  
 ORIGINAL REFERENCE NO.: 62:14259d-e  
 TITLE: Separation of metals by extraction with high-molecular-weight amines  
 AUTHOR(S): Abe, Mihoko; Yazawa, Akira  
 CORPORATE SOURCE: Tohoku Univ., Sendai, Japan  
 SOURCE: Tohoku Daigaku Senko Seiren Kenkyusho Iho (1964), 20(1), 59-64  
 CODEN: TDSSA2; ISSN: 0040-876X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese

L38 ANSWER 457 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The hydrogenation of PhC.tplbond.CH (I) on Ni, Pd  
 /BaSO<sub>4</sub>, and Pt/C catalysts and the formation of PhCH:CH<sub>2</sub> (II),  
 PhEt (III), and ethylcyclohexane (IV) were studied by means of gas  
 chromatography. A thermal conductivity detector with N as the carrier  
 gas was employed. A Cu column, 4 m. long and 6 mm. in diameter, filled  
 with 15% tricresyl phosphate on diatomaceous red brick was used. The  
 temperature was 135° and the volume of the carrier gas was 60 ml./min.  
 The sample size was 5 µl. The analysis took 18 min. The average errors  
 for I, II, III, and IV were -0.38, -0.41, + 0.08, and + 0.60, resp.  
 ACCESSION NUMBER: 1965:12081 CAPLUS  
 DOCUMENT NUMBER: 62:12081  
 ORIGINAL REFERENCE NO.: 62:2226g-h  
 TITLE: Chromatographic separation of phenylacetylene and its  
 hydrogenation products  
 AUTHOR(S): Kuzenbaev, K. K.; Sokol'skaya, A. M.  
 SOURCE: Zavodskaya Laboratoriya (1964), 30(9), 1077  
 CODEN: ZVDLAU; ISSN: 0321-4265  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 458 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title compounds were prepared in high yields by the reaction of  
 aromatic amino, nitro, or nitroamino compds. with aldehydes or ketones in the  
 presence of H and a Ag catalyst mixed with Pd  
 , Ni, or Co (also as oxides) on highly heated SiO<sub>2</sub>. SiO<sub>2</sub>  
 (pellets) (854 g.) was heated to 1100°, soaked with an aqueous HNO<sub>3</sub>  
 solution containing 105.7 g. Ni(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O, 33.1 g. AgNO<sub>3</sub>, 14.49 g. 9%  
 Pd(NO<sub>3</sub>)<sub>2</sub>  
 in HNO<sub>3</sub>, and 22.4 g. Mn(NO<sub>3</sub>)<sub>2</sub>, dried, and heated to 550° in O to  
 give 1 l. catalyst containing Ni 2.5, Ag 2.5, Pd 0.15, and  
 Mn 0.5%. Over this catalyst 480 parts/hr. 25% p-C<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> in  
 MeCOEt and 1250 l. H<sub>2</sub>l. catalyst/hr. was passed in a column at  
 room temperature and 100 atmospheric. The temperature in the lower  
 column part rose to 125-35°. From the reaction mixture H was separated and recirculated and  
 the liquid distilled after venting to yield 98% p,p'-(sec-BuNH)C<sub>2</sub>O<sub>6</sub>H<sub>4</sub> (I)  
 and 2% diamines and monoalkylated amines. I was also obtained in 99% yield  
 with the following catalyst: 854 g. SiO<sub>2</sub> containing 2.89 g. PdO,  
 45.6 g. Ag<sub>2</sub>O, and 15.2 g. V<sub>2</sub>O<sub>5</sub>. The catalyst could be used up  
 to 9 months.  
 ACCESSION NUMBER: 1964:492161 CAPLUS  
 DOCUMENT NUMBER: 61:92161  
 ORIGINAL REFERENCE NO.: 61:16011e-f  
 TITLE: N-Alkylated aromatic amines  
 INVENTOR(S): Schulz, Alfred  
 PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik A.-G.  
 SOURCE: 3 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1179947		19641022	DE	19610822

L38 ANSWER 459 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Low-mol.-weight hydrocarbons were dehydrogenated by passing them with  
 air, iodine, and H over a catalyst consisting of an alkali metal  
 halide, transition metal halides, and Ag halides on  
 α-Al<sub>2</sub>O<sub>3</sub> at 475-525°. E.g., a gas mixture consisting of C<sub>4</sub>H<sub>10</sub>,  
 air, iodine, and H<sub>2</sub>O in the proportions 1:4.76:0.04:2.9, resp., was  
 passed at 500° over a catalyst consisting of KBr 2.08, mixed  
 rare earth chlorides (derived from 45% La<sub>2</sub>O<sub>3</sub>, 38% Nd<sub>2</sub>O<sub>3</sub>, 11% Pr<sub>6</sub>O<sub>11</sub>, 4%  
 Sm<sub>2</sub>O<sub>3</sub>, and 2% residue) 1.09, AgBr 0.82, and α-Al<sub>2</sub>O<sub>3</sub> 100 parts gave a  
 total conversion of 61.6% C<sub>4</sub>H<sub>10</sub> and selectivities of 3.6 and 79.1 for  
 C<sub>4</sub>H<sub>8</sub> and C<sub>4</sub>H<sub>6</sub>. Other transition metals that could be used instead of the rare  
 earths were Mo, W, Zr, Mn, Co, Fe, Ni, Pd, and Cu.  
 ACCESSION NUMBER: 1964:74999 CAPLUS  
 DOCUMENT NUMBER: 60:74999  
 ORIGINAL REFERENCE NO.: 60:13139d-e  
 TITLE: Dehydrogenation of hydrocarbons  
 PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij NV  
 SOURCE: 24 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 609096		19620412	BE	
GB 973564			GB	
GB 973565			GB	
US 3205280		1965	US	
PRIORITY APPLN. INFO.:			GB	19601014

L38 ANSWER 460 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB It is known that in catalytic hydrogenation on metals migration of double  
 bonds in olefins can occur (Condon, CA 53:1094h). In this study the  
 equilibrium between 2,3-dimethyl-1- and 2-butene was examined over the  
 temperature range 90 to 400°C over Pt, Pd, Ni, CO, and  
 Cu catalysts. From a plot of log K (equilibrium constant) vs.  
 1/T (°K.) for conversion of dimethyl-2-butene to dimethyl-1-butene,  
 the heat of reaction was calculated to be 1.80 kcal. per mole. This  
 reaction follows the general rule that in isomerization a double bond is more  
 stable in the terminal position at an elevated temperature. The best  
 catalyst for the isomerization was CO supported on Al<sub>2</sub>O<sub>3</sub>.  
 ACCESSION NUMBER: 1964:35148 CAPLUS  
 DOCUMENT NUMBER: 60:35148  
 ORIGINAL REFERENCE NO.: 60:6249f-g  
 TITLE: Migration of double bonds on metal catalysts  
 AUTHOR(S): Maurel, Raymond; Marcq, Michel; Germain, Jean Eugene  
 CORPORATE SOURCE: Fac. Sci., Lille, Fr.  
 SOURCE: Compt. Rend. (1963), 257(26), 4196-8  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 461 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The H2-O2 fuel cell (200, 500 mw.) was studied through its e.m.f., c.d., and especially the effect of **catalysts**. The electrode material was Gorin's semiconductor electrode (NiO + Li2O or NiO + (Li, Al)O) or sintered Ni (grade B) or Ni-Ta (15%) with **catalyst** sputtered (Pt, Pd, Pt-Rh (40%), **Ag**) in 10 mm. N2 gas, chemical treated (2-3 mg./cm.2 of Pt, Pd black, or addition of Li, **Ag**, V oxide), or reduced by H2 from nitrate or chloride and activated by passing N for several hrs. at 450-500° (20 mg. **Ag**/ cm.2, 0.3 mg. Ce/cm.2, 0.5 mg. Al/cm.2). The solution used was 15% NaOH. The greatest c.d. was obtained by the cell consisting of **Ni + Pd** black as anode and Ni + Pt black + (**Ag**, Ce)O as cathode (1.02 v.). Sputtering together with the chemical treatment seemed to be promising.

ACCESSION NUMBER: 1963:467300 CAPLUS  
 DOCUMENT NUMBER: 59:67300  
 ORIGINAL REFERENCE NO.: 59:12398d-e  
 TITLE: Study of H2-O2 fuel cell  
 AUTHOR(S): Aono, Tomoyoshi; Aoki, Masaharu  
 CORPORATE SOURCE: Univ. Tokyo  
 SOURCE: Oyo Butsuri (1963), 32(5), 339-41  
 CODEN: OYBSA9; ISSN: 0369-8009  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 463 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Cu with less than 0.1% promoter metals such as Fe, Ni, Ru, and Pd on high-surface-area Al2O3 was used to hydrogenate acetylenes selectively from a feed stock of C4 or C3 hydrocarbons at high space velocities. Hydrogenation of 1,3-butadiene was controlled by the reaction conditions. Thus, 480 g. Cu(OAc)2.4H2O and 0.48 g. Ni(OAc)2.4H2O was dissolved in sufficient concentrated NH4OH to make 1 l. of solution.  $\gamma$ -Al2O3 carrier (3 kg., 0.25-8.0 mesh, 200 m.2/g.) was dried several hrs. at 200° and impregnated with the above solution. The mixture was dried at 100-120°, converted to oxides at 300-350° and reduced with H in the presence of steam at 290°. The product had 5% active metal on the carrier. Such a **catalyst** was used to hydrogenate acetylenes in a C3 and a C4 stream containing 1,3-butadiene (I).

1. Addition of 2-4 volume-% CO suppresses diene reduction Use of Ru or Pd as a promoter reduced I, whereas **catalyst** preparation with Ni and Fe did not reduce II.

ACCESSION NUMBER: 1963:447865 CAPLUS  
 DOCUMENT NUMBER: 59:47865  
 ORIGINAL REFERENCE NO.: 59:8590f-h  
 TITLE: Selective hydrogenation with **copper catalysts**  
 INVENTOR(S): Fievel, Ludo K.; Kressley, Leonard J.  
 PATENT ASSIGNEE(S): Dow Chemical Co.  
 SOURCE: 4 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3076858		19630205	US	19580616

L38 ANSWER 462 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A flow apparatus is described in which the catalytic decomposition of HCOOME on the triads **Cu-Ag-Au** and **Ni-Pd-Pt** and on a series of mixed crystals Pd-Au was studied. Gas-chromatographic analysis of the reaction products gave as primary reaction: HCOOME + MeOH + CO. The activation energies are compared with those of the cleavage of HCOOH and are discussed with respect to the applicability of the reaction as a **catalyst** test. The reaction represents a characteristic type of reaction and does not allow any conclusions as to the mechanism of the HCOOH dehydration.

ACCESSION NUMBER: 1963:458777 CAPLUS  
 DOCUMENT NUMBER: 59:58777  
 ORIGINAL REFERENCE NO.: 59:10791e-f  
 TITLE: Catalytic cleavage of methyl formate on metals  
 AUTHOR(S): Schwab, Georg Maria; Knoezinger, Helmut  
 CORPORATE SOURCE: Univ. Munich, Germany  
 SOURCE: Zeitschrift fuer Physikalische Chemie (Muenchen, Germany) (1963), 37(3-4), 230-42  
 CODEN: ZPCFAX; ISSN: 0044-3336  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 464 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The **catalyst** was suspended in liquid NH3 in a 125-150-cc. autoclave at pressures up to 150 atmospheric and temps. -60 to 25°. D-enriched H was admitted with vigorous stirring (70-270 per min.). After a period of time, the gas phase was removed and the NH3 was frozen with liquid air and separated into its components. The reaction rate was determined with a special H/D mass spectrometer (Atlas-Werke Bremen Type HD 57) which measured the decrease in D content in the H and the increase in D content of the NH3. The half-time of the exchange reaction,  $\tau$ , is a function of the reciprocal of the reaction velocity. **Catalysts** tested (in more than 100 expts.) included: KNH2, guanidine, diphenylguanidine, K-urea, Li and Na boranates, HAUCl4.4H2O, AgNO3, TiH2, UH3, Raney Ni, Raney Fe, silicic acid with 10% Ni, active C with 10% Pd, Pt, active C with 10% Pt, and SiO2 with 10% Pt. For comparison, exchange expts. between H and gaseous NH3 at H partial pressures of 50 mm.-1.5 atmospheric and NH3 pressures of 25 mm.-8.7 atmospheric (at 20°; saturation vapor pressure) were carried out. KNH2 was the most effective **catalyst** for the isotope exchange in liquid NH3; with intensive mixing, the reaction rate was limited only by transfer phenomena. Metals of Group VIII were effective up to -60°, with activity decreasing in the order Pt, **Pd**, **Ni**, Fe. The same exchange rate was found for H-H2O as for H-liquid NH3, when the difference in H solubility is considered. The rate with Pt-active C increased with the amount of **catalyst** in the range 10-100 g./l. Expts. with SiO2- and active C-supported Pt, independent of the specific surface, showed the same conversion per unit weight and the same activation energy. The apparent activation energies of the exchange in liquid NH3 were: KNH2 5.4 ± 0.6, Pt/C 10.0 ± 0.5, Pt/SiO2 9.6 ± 0.6, and Pd/C 11.3 ± 0.7 kcal./mol. The exchange rate in the system liquid NH3/HD increased with KNH2 proportionally and with Pt-C with the root of the H pressure. In catalysis with Pd-C, between 15 and 150 atmospheric, the exchange was independent of H pressure. The exchange between H and gaseous NH3 on Pt-C is described by the rate law  $\lambda = \frac{a p_{NH_3} p_{HD}^{1/2}}{(b + p_{NH_3})^2}$ . When this expression is extrapolated beyond the saturation vapor pressure, the values agree with those from measurements of exchange between H and liquid NH3. The isotope exchange results from a chemisorbed H atom and a chemisorbed NH3 mol., according to a Langmuir-Hinshelwood mechanism. The mechanism is basically the same in the liquid and in the gaseous phases. The number of H/D atoms exchanged in a unit time is considerably less in the liquid, since a larger part of the surface is blocked by adsorbed NH3 mols. 70 references.

ACCESSION NUMBER: 1963:412349 CAPLUS  
 DOCUMENT NUMBER: 59:12349  
 ORIGINAL REFERENCE NO.: 59:2209d-h,2210a  
 TITLE: Isotope exchange between hydrogen and liquid ammonia in the presence of heterogeneous **catalysts**  
 AUTHOR(S): Haul, R.; Blennemann, D.  
 CORPORATE SOURCE: Inst. Physik. Chem., Nordrhein-Westfalen, Germany  
 SOURCE: Berichte der Kernforschungsanlage Juelich (1962), No. 31-FC, 94 pp.  
 CODEN: BKEJAS; ISSN: 0366-0885

L38 ANSWER 464 OF 514 CAPIUS COPYRIGHT 2004 ACS on STN (Continued)  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L38 ANSWER 465 OF 514 CAPIUS COPYRIGHT 2004 ACS on STN  
AB Selective hydrogenation of C<sub>2</sub>H<sub>2</sub> compds. in C<sub>2</sub>H<sub>4</sub> in the presence of Ni, Pd, and Pt catalysts was studied with synthetic mixts. containing C<sub>2</sub>H<sub>4</sub> 99%, C<sub>2</sub>H<sub>2</sub> 0.2-0.8%, and 5-10 mg. S/cu . m. The gas was passed over Ni-kieselghur (I) containing 50% Ni; Cr-Ni containing 52% Ni (II); Pd on Al<sub>2</sub>O<sub>3</sub> (III) and on C (IV) containing 0.2-0.3% Pd and Pt on Al<sub>2</sub>O<sub>3</sub> containing 0.3% Pt. At 180°, the product obtained over all catalysts was free C<sub>2</sub>H<sub>2</sub>. Catalyst I was active only 600 hrs. and its selectivity was low. Increasing the concentration of H above 4% raised the temperature and fused the catalyst. Similar results were obtained with catalyst II, which retained activity not longer than 800 hrs. The Pt and Pd catalysts retained their activity 3000 hrs. On catalysts III and IV, 80% of the COS was hydrogenated to H<sub>2</sub>S and the remainder was adsorbed. On catalyst I, practically all of the COS was first absorbed and only 1-2% of it was subsequently hydrogenated.  
ACCESSION NUMBER: 1963:14477 CAPIUS  
DOCUMENT NUMBER: 58:14477  
ORIGINAL REFERENCE NO.: 58:2354d-e  
TITLE: Purification of ethylene from acetylene impurities  
AUTHOR(S): Berger, I. I.; Rozantsev, E. G.; Raeva, V. S.; Zaitseva, S. S.; Klimenko, M. Ya.  
SOURCE: Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1962), 35, 1859-61  
CODEN: ZFKHAB; ISSN: 0044-4618  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L38 ANSWER 466 OF 514 CAPIUS COPYRIGHT 2004 ACS on STN  
AB The influence of the nature of chelating metal, chemical composition of ligands, and organic units and side groups of the chain of chelate polymers on catalytic activity were measured. Polychelates of Cu, Ni, Fe, Pd, Co, Zn, and Cd with tetrafunctional compds. were studied. The catalytic activity was determined by the rate and selectivity of decomposition of N<sub>2</sub>H<sub>4</sub> (either to N and H or to NH<sub>3</sub> and N), iso-PrOH, and HCOOH. The catalytic activity decreases in the series Cu, Ni, Pd, Co, Fe, Zn and Cd chelates are inactive. The catalytic activity depends also on the structure of the chelate nodes; for Cu chelates, it decreases in the series (N,S), (S,S), (N,O), (O,O). The structure of the organic component of metal chelates influences the catalytic selectivity. The resp. monomeric chelates were mostly inactive. The catalytic activity of chelate polymers is higher by an order of 2 than that of inorg. Cu semiconductors. It depends on the electronic state of the metal in the chelate node and cannot be related to the electrocond. of the polymer.  
ACCESSION NUMBER: 1962:469901 CAPIUS  
DOCUMENT NUMBER: 57:69901  
ORIGINAL REFERENCE NO.: 57:13959f-1  
TITLE: Catalytic properties of chelate polymers  
AUTHOR(S): Boreskov, G. K.; Keizer, N. P.; Rubtsova, L. F.; Rukhadze, E. G.  
CORPORATE SOURCE: Inst. Catalysis, Acad. Sci. U.S.S.R., Novosibirsk  
SOURCE: Doklady Akademii Nauk SSSR (1962), 144, 1069-72  
CODEN: DANKAS; ISSN: 0002-3264  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L38 ANSWER 467 OF 514 CAPIUS COPYRIGHT 2004 ACS on STN  
AB Furfuryl alc. (I) is obtained from the catalytic hydrogenation of furfural (II) using 1-2% Adkins catalyst (Cu-Cr oxides) at 150-75°, 100-50 kg./sq. cm. Below 100 kg./sq. cm. and 150-80° using Raney or other Ni catalysts, tetrahydrofurfuryl alc. (III) is obtained. III is also a prodnet of hydrogenation of II, PtO<sub>2</sub> catalyst, 20-60°, 1-3 kg./ sq. cm. Catalytic decarbonylization of II in H or steam over Zn-Cr yields furan (IV). Hydrogenation of IV over Ni, Pd, or Os yields tetrahydrofuran (V). In the production of synthetic resins, I can be used with aldehydes, phenols, phenol-HCHO, and carbamide-HCHO while II can be treated with alkyl and monovalent phenols, alkyl ketones, aniline, lignin, and phenol-lignin condensates. Esters of III are useful as plasticizers for cellulose esters, polyvinyl chlorides, polystyrenes, polyamides, cellulose acetate butyrate, and polyvinyl acetals. The N derivs. possess high biol. activity. I, II, III, and V are also useful as solvents.  
ACCESSION NUMBER: 1962:442757 CAPIUS  
DOCUMENT NUMBER: 57:42757  
ORIGINAL REFERENCE NO.: 57:8525b-d  
TITLE: Furfural-valuable raw material for the chemical industry  
AUTHOR(S): Mikhailov, L.  
SOURCE: Khim. i Ind. (Sofia) (1961), 33(No. 4), 117-21  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L38 ANSWER 468 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The reaction of halophenols and haloarenes with R3SiH (R = alkyl or aryl) was studied with metals or their halides as **catalysts**. In the presence of halides of **Zn**, **Sn**, **Fe**, or **Al**, p-ClC6H4OH (I) reacted as follows, I + Et3SiH (II) + p-ClC6H4OSiEt3 (III) + H2, to give III in a yield up to 98%. o-BrC6H4OH (IV) reacted similarly, p-BrC6H4OH did not react. By using colloidal **Co**, **Ni**, **Pd**, or **Pt** (prepared in situ by II), I (or IV) reacted as above or as follows: I + 2II → PhOSiEt3 (V) + Et3SiX (VI) + H2 (X = halogen). By heating 13 min. I, II, and NiCl2 in a 0.1:0.1:0.00077 mole ratio at 117-240°, 88.8% III, 2.9% V, and 7.3% VI (X = Cl) were obtained. After 46 min. at 115-220° and in the same ratio, IV yielded 74.9% p-BrC6H4OSiEt3, 16.8% V, and 19% VI (X = Br). At a molar ratio of 0.1:0.2:0.00077, after 8 min. at 108-30°, I gave 76.9% III, 21.8% V, and 22% VI (X = Cl); after 26 min. at 111-60° IV yielded 92.8% V, and 93.4% VI (X = Br). **Zn**, **Sn**, **Fe**, and **Al** did not catalyze the reaction of halobenzenes with II. Colloidal **Co**, **Ni**, **Pd**, and **Pt** promoted the following process: PhX + II + VI + C6H6. The results were (X, temperature, and time in min. of heating, and % yield of VI given): Cl, 105-13°, 507, 95.2; Br, 106-17°, 103, 97.9; I, 124-6°, 23, 91.7. Dihalobenzenes and 9,10-dibromanthracene reacted similarly with one or both halogen atoms.

ACCESSION NUMBER: 1962:46096 CAPLUS  
 DOCUMENT NUMBER: 56:46096  
 ORIGINAL REFERENCE NO.: 56:4737e-h  
 TITLE: Dehydrocondensation of trialkyl- or arylsilanes with organic compounds containing hydroxyl group  
 AUTHOR(S): Khudobin, Yu. I.; Dolgov, B. N.; Kharitonov, N. P.  
 CORPORATE SOURCE: Inst. Chem. Silicates Acad. Sci. U.S.S.R., Leningrad  
 SOURCE: Khim. i Prakt. Primenenie Kremneorg. Soedinenii, Trudy  
 CONF., Leningrad (1961), Volume Date 1958, (No. 6), 155-8  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 470 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Coke-oven gas and other industrial gases may contain C2H2 which interferes with their utilization and may cause explosions. C2H2 is removed by selective hydrogenation to C2H4, or preferably C2H6, in the presence of water vapor and a suitable **catalyst**, which is followed by catalytic oxidation of organic S compds. to make them H2O-soluble and thus easily removable. **Catalysts** for the hydrogenation may be based on **Pt**, **Pd**, **Ni**, or **Cr** and for the oxidation on **Cu**, **Mn**, **Zn**, **Ag**, **Co**, **Fe**, or **Cr**. The purified gas is used for the manufacture of MeOH.

ACCESSION NUMBER: 1962:39896 CAPLUS  
 DOCUMENT NUMBER: 56:39896  
 ORIGINAL REFERENCE NO.: 56:7623b-c  
 TITLE: Removal of acetylene from industrial gases  
 PATENT ASSIGNEE(S): Houilleres du Bassin de Lorraine  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1265206		19600516	FR	
GB 953216			GB	

L38 ANSWER 469 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB references.  
 ACCESSION NUMBER: 1962:43908 CAPLUS  
 DOCUMENT NUMBER: 56:43908  
 ORIGINAL REFERENCE NO.: 56:8283i  
 TITLE: Crystal structures of coordination compds. of the metals **Cu**, **Co**, **Ni**, **Pd**, and **Pt**  
 AUTHOR(S): Kuroya, Hisao  
 CORPORATE SOURCE: Osaka City Univ.  
 SOURCE: Kagaku no Ryoiki (1961), 15, 769-81, 851-63, 951-9.-187  
 CODEN: KNRYAK; ISSN: 0022-2070  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 471 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB N,N-Disubstituted nitrosamines were prepared from secondary amines or from tertiary amines (having 1 alkyl group, which was eliminated in the reaction) with pure NO or NO diluted with steam or N2O at 7-28 atmospheric and either in solution below the decomposition temperature of the corresponding nitrosamine in the presence of a **Pd**-, **Ni**-, or **Rh**-C **catalyst**, or at 20-66° in the presence of sulfides, chlorides, or pyridinium chlorides of **Mn**, **Cu**, **Ni**, or **Fe** (**catalysts A**) especially the Nsubstituents had functional groups, which did not react with NO, e.g. OH, halogens, **Cn**, **CO**, **CO2H**, and **NO2**. Thus,

34 g. Me2NH and 1 g. CuCl2 were kept 5 hrs. at 97° and 19 superatm. NO to give dimethylnitrosamine, 71%. Similarly prepared were: diethylnitrosamine, 70%, from 35 g. Et2NH heated 4 hrs. at 104°/21 atmospheric (superatm. NO), or in 93% yield from 50 g. Et2NH heated 3 hrs. at 120°/21 atmospheric in the presence of 2 g. CuCl2, or in 90% yield after 5.5 hrs. at 30-96°/21 atmospheric in the presence of 1 g. FeS, or in 84% yield after 6 hrs. at 100°/21 atmospheric in the presence of 50 g. pyridine and 1.3 g. MnS, or in 72% yield from 25 g. Et2NH in 25 g. MeOH

after 4 hrs. at 53°/20 atmospheric in the presence of 5% Rh-C; dipropylnitrosamine, 98%, from 50 g. Pr2NH after 2.5 hrs. at 30-59°/21 atmospheric in the presence of 12 g. 10% Pd-C (I); diisopropylnitrosamine (II), 84%, from 25 g. iso-Pr2NH in 50 g. 95% EtOH after 4 hrs. at 76°/16 atmospheric in the presence of 2 g. I; N-benzyl-N-methylnitrosamine, 86%, from 25 g. cyclohexylamine (III) after 6 hrs. at 80°/18 atmospheric in the presence of 2 g. CuCl2, or in 31% yield

after 7 hrs. at 93°/21 atm. in the presence of 2 g. Ni-C in 50 g. EtOH, or in 86% yield under the same conditions in the presence of I; N-nitrosopiperidine, 66%, from 35 g. piperidine in 50 g. EtOH after 3 hrs. at 36°/15 atmospheric in the presence of 2 g. I; N-nitrosopyrrolidine, 80%, from 50 g. pyrrolidine after 2 hrs. at 64°/21 atmospheric in the presence of 2 g. I; N-benzyl-N-methylnitrosamine, 89%, from 50 g. benzylmethylamine in 50 g. MeOH after 5.5 hrs. at 38°/19 atmospheric in the presence of 2 g. I; diphenylnitrosamine, 76%, from 35 g. diphenylamine after 2.5 hrs. at 84°/22 atmospheric in the presence of 1 g. CuCl2 and 25 g. pyridine; N-nitroso-N-ethylaniline, 84%, from 25 g. PhNH2 in 25 g. MeOH after 4 hrs. at 78°/21 atmospheric in the presence of I; N-nitroso-N-methylaniline, 45%, from 20 g. PhNH2 after 2 hrs. at 93°/23 atmospheric in the presence of 2 g. MnS and 100 g. pyridine; N-nitroso-N-methylp-toluidine, 66%, from N-methyl-p-toluidine in 25 g. MeOH after 5 hrs. at 75°/21 atmospheric in the presence of 2 g. I; N-nitrosodiethanolamine, 90%, from 50 g. diethanolamine after 6.5 hrs. at 97°/21 atmospheric in the presence of 8 g. Cu derivative of pyridinium chloride: bis(N-cyanoethyl)nitrosamine, 74%, from 25 g. bis(N-cyanoethyl)amine in 25 g. MeOH by heating 5 hrs. at 74°/21 atmospheric in the presence of 2 g. CuCl2; 2,2',4,4'-tetrachlorodiphenylnitrosamine, C12H6Cl4N2O, 80%, m. 66-7° (95% EtOH), insecticide, from 5 g. 2,2',4,4'-tetrachlorodiphenylamine in 50 g. EtOH by heating 7 hrs. at 90°/12 atmospheric in the presence of 2 g. I. At lower temperature and in the presence of especially CuCl2, FeCl2, or CuCN mixts. of dialkylammonium nitrates

L38 ANSWER 471 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 and dialkylnitrosamines were obtained, which were sepd. by their different solubilities (the nitrates also yielded nitrosamines by heating above 70° in the presence of catalysts A). Thus, in an autoclave a mixt. of 25 g. iso-Pr2NH, 15 g. MeOH, and 10 g. H2O was kept 30 min. at 27°/21 atm. the soln. evapd., the residue extd. with petr. ether to ppt. diisopropylammonium nitrate (IV), 33%, and the soln. evapd. to give II, 2.3%. Similarly prepd. were: dibutylammonium nitrite (V), 58%, and dibutylnitrosamine (VI), 38%, from 25 g. dibutylamine (VII) in 25 g. MeOH after 8 min. at 0° in the presence of 0.1 g. CuCl2, or only VI, 89%, from 50 g. VII after 17 hrs. at 24-38°/16 atm. in the presence of 0.1 g. CuCl2, or in yields of 55% V and 43% VI from 25 g. VII after 30 min. at 50-70° in the presence of 0.01 g. CuCl2 (sepn.) with CuCl4; diisobutylammonium nitrate, 21%, and diisobutylnitrosamine, 31%, from 25 g. diisobutylamine kept in 25 g. MeOH at 28-34° in the presence of 0.05 g. CuCl2 by sepn. with Et2O; dicyclohexylammonium nitrate (VIII) 74%, and dicyclohexylnitrosamine (IX), 7%, from 25 g. III in 25 g. MeOH after 15 min. at 20-29° in the presence of 0.07 g. CuCl2, in yields of 17% VIII and 31% IX at 25° in the presence of 0.04 g. FeCl2, or in yields of 19% VIII and 73% IX by heating 15 min. at 70° in the presence of 0.07 g. CuCl2. Below 50° and without solvent secondary alkylamines yielded solid addn. compds., R2N(NO)2NH2R2, which decompd. above 66° or in MeOH or in the presence of the Cu deriv. of pyridinium chloride to yield dialkylammonium nitrites and nitrosamines. Thus, 28 g. Me2NH after 3 hrs. at 6-25°/21 atm. yielded a white solid, which decompd. at 78°/15 superatm. N to give 49% Me2NNO. Et2NH (100 g.) after 3.5 hrs. at 35° similarly yielded 117 g. solid, m. 84-93° (decompn.), from which in aq. soln. in the presence of the Cu deriv. of pyridinium chloride Et2NNO was obtained, and in MeOH with evolution of gas Et2NH2NO2 and Et2NNO were obtained. From 40 g. Pr2NH heated 7 hrs. at 25-45°/20 atm. was also obtained 40 g. white solid, m. 96-8°, which decompd. at 111° to give Pr2NH, Pr2NNO, and traces of nitrate. Piperidine (25 g.) 13 hrs. at 26°/21 atm. yielded a waxy adduct of piperidine and NO and piperidylnitrosamine. The ammonium cation of these addn. compds. could be replaced by metallic cations (Na, Ca, Sr, Cu, Ni) or by an Et group. Thus, a mixt. of 30 g. Me2NH, 20 g. NaOH, and 50 g. H2O yielded after 7 hrs. at 25°/14 atm. and addn. of solid NaOH a ppt. of [Me2N(NO)2]Na.0.5 H2O (iso-butanol), which was also prepd. by treating the ammonium compd. with solid NaOH below 50°, from which the Ca, Sr, Cu, and Ni salts were obtained by reaction with the corresponding metal chlorides. [Pr2N(NO)2]2-Ni2H2O (green solid) was prepd. from (Pr2N(NO)2) Na.xH2O (x = 0.5-4) with hydrated NiCl2 in H2O. [Et2N(NO)2] Et, b0.5 52-5°, nD24.5 1.4497, was prepd. by stirring an equimolar mixt. of hydrated [Et2N(NO)2]Na 4.33 hrs. at 36° with Et2SO4 and extn. with petr. ether, and [Bu2N(NO)2]Et, 57%, by adding 35 g. Et2SO4 at 50-60° to the product from 32 g. VII and 10 g. NaOH in 75 g. MeOH at room temp. and 21 atm., treating the mixt. with aq. NH4OH, and Et2O-extg.

ACCESSION NUMBER: 1962:24645 CAPLUS  
 DOCUMENT NUMBER: 56:24645  
 ORIGINAL REFERENCE NO.: 56:4594h-1, 4595a-g, 4596a-e  
 TITLE: Nitrosamines

L38 ANSWER 472 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB An improved method of HNO3-metal nitrate regeneration of Fe, Co, Ni, Pd, Rh, Cr, Mo, W, Cu, Ag, etc., catalysts on a variety of supports is described. For example, a supported Ni catalyst was treated with 250 g. 52% HNO3/kg. of catalyst in an autoclave at 110 and 1 atmospheric for 1 hr. It was then treated for 30 min. at 100° with a solution of 15% Ni nitrate. After drying in air, a stream of H was passed over the catalyst at 250° to reform the oxide. Before regeneration, the composition was Ni 3.6, C 0.16, and S 0.12; after regeneration, Ni 4.2, C 0.04, and S 0.06% by weight. Cf. CA 39, 50582; 46, 4149f, 11513c.

ACCESSION NUMBER: 1961:55975 CAPLUS  
 DOCUMENT NUMBER: 55:55975  
 ORIGINAL REFERENCE NO.: 55:10750h-1, 10751a  
 TITLE: Regeneration of metallic catalysts  
 INVENTOR(S): Flamion, Claude  
 PATENT ASSIGNEE(S): Societe anon. des produits chimiques  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1166575		19581113	FR	
DE 1103926			DE	
GB 834361			GB	

L38 ANSWER 471 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 INVENTOR(S): Reilly, Edward Leo  
 PATENT ASSIGNEE(S): E. I. du Pont de Nemours & Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1085166		19600714	DE	

L38 ANSWER 473 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The title compound is prepared by passing a stream of an inert gas, such as N, which is saturated with cyclopentadiene, over a FeAl2O3 catalyst containing radioactive Ru. The reaction product, containing dicyclopentadienylruthenium, is separated by a chromatographic method. Best results are obtained by addition of metals which increase the activity of the catalyst, such as Ag, Se, Ni, Pd, or their mixts.

ACCESSION NUMBER: 1961:13476 CAPLUS  
 DOCUMENT NUMBER: 55:13476  
 ORIGINAL REFERENCE NO.: 55:2685d-e  
 TITLE: Radioactive dicyclopentadienylruthenium without a carrier  
 INVENTOR(S): Gotte, Hans; Wenzel, Martin  
 PATENT ASSIGNEE(S): Farbwerke Hoechst AG  
 SOURCE From: C.Z. 1959, 12057..  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1049860		19590205	DE	

L38 ANSWER 474 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Thermoplastic material, e.g. coal pitch, acrylate resins, polystyrene, and polyethylene, of 100-325 mesh is coated with Ni. The material is first converted to spherical particles by dispersing it as an aerosol in a tubular-heated furnace at 600°. The air-borne particles settle in the furnace, melt, and assume spherical shape. These spheres are boiled for 5 min. in Fehling solution. After cooling, 15 g. dextrose is added to 150 cc. of solution and the solution is boiled for 2 min. with stirring. The Cu-coated spheres are rinsed and decanted with distilled H<sub>2</sub>O. Then they are immersed for 1 min. in a solution containing 100 p.p.m. of PdCl<sub>2</sub>-coating the particles partially with Pd for catalytic action. The material, after rinsing and cleaning, is now transferred to a chemical Ni-plating bath comprising NiCl<sub>2</sub>.6H<sub>2</sub>O 30, NaH<sub>2</sub>PO<sub>2</sub>.H<sub>2</sub>O 30, and Na hydroxyacetate 50 g./l. After stirring at 90° for 10 min., a bright continuous Ni coating is produced. The particles are useful for coating paper or other sheet materials, e.g. for pressure-sensitive manifold sheets, or for electrophotography.

ACCESSION NUMBER: 1960:109807 CAPLUS  
 DOCUMENT NUMBER: 54:109807  
 ORIGINAL REFERENCE NO.: 54:20818a-g  
 TITLE: Resinous or pitch particles coated with nickel  
 INVENTOR(S): Schossberger, Frederick; Werle, Donald K.; Michalchik, Michael  
 PATENT ASSIGNEE(S): Uarco Inc.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2939804		19600607	US	

L38 ANSWER 476 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The rate of deposition (10 mg./sq. cm./hr.) is increased by 30-80% by the addition of Na citrate 40-150 and mono- or dicarboxylic acid (succinic acid) 5-30 to the aqueous solution containing CoCl<sub>2</sub> 5-35 and alkaline hyposulfite 10-100 g./l. The pH is adjusted to 8-10 by the addition of NH<sub>4</sub>OH. The reaction is catalyzed by Fe, Ni, Co, and Pd. If Cu or Cu alloy is to be coated, PdCl<sub>2</sub> is used as a catalyst, but if the coating has been started, the reaction becomes autocatalytic.

ACCESSION NUMBER: 1960:67766 CAPLUS  
 DOCUMENT NUMBER: 54:67766  
 ORIGINAL REFERENCE NO.: 54:12970e-f  
 TITLE: Chemical deposition of cobalt on metals  
 PATENT ASSIGNEE(S): Centre d'information du Cobalt S.A.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 583622		19591031	BE	

L38 ANSWER 475 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A method was described for determining the bond energies for reactive centers on the catalyst surface with the elements of the organic compds. from the relative adsorption coefficient. Values obtained by this method for Ni, Pd, and ZnO catalysts were compared with values obtained by kinetic methods (CA 52, 10451).

ACCESSION NUMBER: 1960:84816 CAPLUS  
 DOCUMENT NUMBER: 54:84816  
 ORIGINAL REFERENCE NO.: 54:16151a-b  
 TITLE: Possible method for determining bond energies from the relative adsorption coefficients  
 AUTHOR(S): Kiperman, S. L.  
 SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1959) 2054-5  
 CODEN: IASKA6; ISSN: 0002-3353  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

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 AB Hydrogenations were conducted in a train consisting of H tank, flowmeter, H<sub>2</sub>O or concentrated H<sub>2</sub>SO<sub>4</sub> bubbler, vaporizing flask held at 5-20° below the b.p. of compound, furnace of glass or Cu when large amts. of HF were liberated, CO<sub>2</sub> trap and H<sub>2</sub>O bubbler. The only useful form of Ni was the com. reagent grade powder. Pd on C was prepared by dissolving 5 g. in aqua regia, evaporating twice with concentrated HCl, diluting with H<sub>2</sub>O, adding to 25 g. active C and heating with alkaline CH<sub>2</sub>O. It was stored wet. Pt on C was similarly prepared from H<sub>2</sub>PtCl<sub>6</sub>.6H<sub>2</sub>O. Catalysts were reduced several hrs. before using. C6F5Cl (I) (24.7 g.) over Ni for 3.7 hrs. gave 4.48 g. product b. 88-91°, probably 1,2,3,5- and 1,2,4,5-C<sub>6</sub>H<sub>2</sub>F<sub>4</sub> (75%) and C<sub>6</sub>H<sub>3</sub>F<sub>3</sub> (25%), some product b. 92-8° believed to contain 1,2,3,4-C<sub>6</sub>H<sub>2</sub>F<sub>4</sub>, and recovered I. Several recyclings probably resulted in conversion of I to C<sub>6</sub>H<sub>4</sub>F<sub>4</sub>Cl. 2-Chloroheptafluorotoluene (II) (1099 g.) (in several runs) over Ni at 258-85° yielded impure heptafluorotoluene, C<sub>6</sub>H<sub>4</sub>CF<sub>3</sub>, b. 103-12°, and 877 g. II over 60 hrs. I (9.6 g.) and H (100 cc./min.) over 18 g. Pd at 285-90° gave (a) 1.23 g., b. 88-91°, n<sub>20</sub>D 1.4051, possibly 1,2,4,5-C<sub>6</sub>H<sub>2</sub>F<sub>4</sub> and C<sub>6</sub>H<sub>3</sub>F<sub>3</sub>, (b) 1 g., b. 91-105°, n<sub>20</sub>D 1.4021, possibly 1,2,3,4-C<sub>6</sub>H<sub>2</sub>F<sub>4</sub>, (c) (0.5 g., b. 105-12°, n<sub>20</sub>D 1.3990, and (d) 2.7 g. semisolid residue, n<sub>20</sub>D 1.3667. Similarly 17 g. II over Pd over 2 hrs. gave 11 g. α,α,3,4,5,6-heptafluorotoluene, b. 102-5.5°, and 1 g. residue. 1,2,3,4-C<sub>6</sub>H<sub>2</sub>F<sub>4</sub>, b. 95°, d<sub>25</sub> 5 1.4010, n<sub>20</sub>D 1.4095, was obtained in 12% yield by passing 2,3,4,5-F<sub>4</sub>C<sub>6</sub>HCl over Ni and in 77.2-87.5 yield with Pd catalyst at 280°. C<sub>6</sub>F<sub>6</sub> over Pd in successive runs showed [temperature, % loss of F- (equivalent/mole feed)]: 275°, 0; 300°, 17; 325°, 0. When C<sub>6</sub>F<sub>6</sub> was used over Pt, the catalyst was inactive at 250° and gave best results near 300°. The product from one run over Pd (analyzed by mass spectrography) consisted of C<sub>6</sub>F<sub>6</sub> 45, C<sub>6</sub>H<sub>5</sub>F 40, C<sub>6</sub>H<sub>2</sub>F<sub>4</sub> 10, C<sub>6</sub>H<sub>3</sub>F<sub>3</sub> 4, C<sub>6</sub>H<sub>4</sub>F<sub>2</sub> 14.

ACCESSION NUMBER: 1959:111482 CAPLUS  
 DOCUMENT NUMBER: 53:111482  
 ORIGINAL REFERENCE NO.: 53:199281, 19929a-d  
 TITLE: Reactions of aromatic fluorocarbons with hydrogen  
 AUTHOR(S): Florin, Roland E.; Pummer, Walter J.; Wall, Leo A.  
 SOURCE: J. Research Natl. Bur. Standards (1959), 62, 119-22 (Research Paper 2940)  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 478 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A short review with 15 references. Reactions of various trialkyl(aryl)silanes with phenol and its derivatives in the presence of halo compds. of Zn, Sn, Cr, Co, Ni, Pd, and Pt as catalysts are briefly described.

ACCESSION NUMBER: 1959:62394 CAPLUS  
 DOCUMENT NUMBER: 53:62394  
 ORIGINAL REFERENCE NO.: 53:11282c-d  
 TITLE: Dehydrocondensation of trialkyl(aryl)silanes with hydroxy-containing organic compounds  
 AUTHOR(S): Khudobin, Yu. I.; Dolgov, B. N.; Kharitonov, N. P.  
 CORPORATE SOURCE: Inst. Silicate Chem., Acad. Sci. U.S.S.R., Leningrad  
 SOURCE: Khim. i Prakt. Primenenie Kremenorg. Soedinenii, Trudy  
 DOCUMENT TYPE: Konf., Leningrad (1958), (No. 1), 220-3  
 LANGUAGE: Journal  
 Unavailable

L38 ANSWER 479 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Catalytic reactions between acetone vapor and D were studied on evaporated metals, Ag, Au, W, Ni, Pd, Fe, Rh. A mass-spectrometer technique was used. Reduction of the carbonyl group and exchange of the methyl groups were observed. The use of D established that in the reduction the main product is iso-PROH and the mechanism involves simple addition of 2 H atoms to the carbonyl bond. The deuteration rate is less than the hydrogenation rate, and this is accounted for. Energies of activation and frequency factors are derived. A correlation was obtained between the activity of the metal and the percentage d character of the metallic bonds.

ACCESSION NUMBER: 1958:38619 CAPLUS  
 DOCUMENT NUMBER: 52:38619  
 ORIGINAL REFERENCE NO.: 52:69061,6907a-b  
 TITLE: The catalytic deuteration and exchange of acetone on evaporated metal films  
 AUTHOR(S): Kemball, G.; Stoddart, C. T. H.  
 CORPORATE SOURCE: Queens Univ., Belfast, N. Ire.  
 SOURCE: Proc. Roy. Soc. (London) (1957), A241, 208-22  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 480 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Dinitropentamethylenetetramine (I) (from hexamine and HNO2) is reduced with or without a catalyst at 10-200° and 15-1000 lb./sq. in. (25-100° and about 500 lb./sq. in. preferred) to give N2H4, Me3N, and Me2NH. Such catalysts as Ni (preferably Raney), Pt, Pd, or Fe are used, preferably fixed, although fluidized catalysts can be used. When nascent H is used, no catalyst is needed. Hydrogenation is preferably done in an inert liquid medium in which the I is at least partially soluble. The low-boiling amines and water distill off, leaving N2H4 hydrate which is neutralized and distilled. Thus, I and Zn dust in approx. equal wts. were mixed with enough water to form a paste which was added slowly to a 50% AcOH solution. On completion of the reaction, the yellow Zn residue was filtered out, leaving N2H4 in solution. In another case, I and Raney Ni were suspended in EtOH and treated with H at 50° and 185 lb./sq. in. for several hrs. with constant agitation. Distillation removed Me3N and Me2NH.

ACCESSION NUMBER: 1957:10612 CAPLUS  
 DOCUMENT NUMBER: 51:10612  
 ORIGINAL REFERENCE NO.: 51:2239h-1,2240a  
 TITLE: Hydrazine  
 INVENTOR(S): Passino, Herbert J.  
 PATENT ASSIGNEE(S): M. W. Kellogg Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2768878		19561030	US	

L38 ANSWER 481 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Considerations of the energies involved in the formation of possible intermediates during catalytic dehydrogenation of C6H12 on Pt, Pd, or Ni catalysts indicate that the most probable reaction path consists of the formation of cyclohexene (I) and the disproportionation of I first to C6H8 and then to C6H6. Only the first step is hindered by a pos. free-energy change. The 2nd step does not include detachment of H from the catalyst surface, and has neg. free-energy change. Similarly, in hydrogenation of C6H6, the first step, addition of H, is hindered by pos. free-energy change, while the further steps, such as addition of more H or disproportionation, are fast and accompanied by neg. free-energy change. On Pt-pumice (4% Pt) catalyst at 290° and a contact time of 3 sec., disproportionation of C6H10 was found to occur much faster than dehydrogenation of C6H12 or C6H10, in agreement with the proposed mechanism. Specificity of Pt, Pd, and Ni for the hydrogenation of C6H6 is proposed as explanation, as an alternate to the sextet hypothesis of Balandin. The greater difficulty to hydrogenate C6H6, as compared with olefins, is explained by the difficulty of adding the first H: this is caused by the retarded chemisorption of C6H6, stemming from the higher energy needed to overcome the resonance and to immobilize the double bonds of C6H6. The failure to hydrogenate C6H6 on Fe or on Ni-free Cu, may be due to the same causes which manifest themselves even more strongly because of the lower activity of these catalysts.

ACCESSION NUMBER: 1955:80728 CAPLUS  
 DOCUMENT NUMBER: 49:80728  
 ORIGINAL REFERENCE NO.: 49:15217a-d  
 TITLE: Mechanism of the hydrogenation of benzene and dehydrogenation of cyclohexane  
 AUTHOR(S): Kagan, M. Ya.  
 SOURCE: Problemy Kinetiki i Kataliza, Akad. Nauk S.S.S.R. (1949), 6(Geterogennyi Kataliz), 232-8  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable



L38 ANSWER 482 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The reaction between H and O was studied on various preps. of Fe, Co, Ni, Cu, Rh, Pd, Pt, Ag, and Au. The results on Pt indicate that the reaction proceeds via a surface chain mechanism. Comparison of different preps. of Pt, Ag, and Fe shows that the specific activity for each catalyst is independent of the method of preparation, the crystal size, or the thermal treatment. The catalytic activity is a maximum for those metals possessing a completed d-band, i.e., Ni, Pd, and Pt. Pt-Au and Pd-Au alloys were also used to catalyze the H + O and O + SO<sub>2</sub> reactions. Modification of the catalytic activity due to the addition of Au was different for Pt and Pd; this indicated that the difference was due to the reaction being catalyzed and not to the vacancies in the d-band of the metal.

ACCESSION NUMBER: 1955:38421 CAPLUS  
 DOCUMENT NUMBER: 49:38421  
 ORIGINAL REFERENCE NO.: 49:7350c-e  
 TITLE: The catalytic activity of metals for the oxidation of hydrogen  
 AUTHOR(S): Boreksov, G. K.  
 SOURCE: Journal de Chimie Physique et de Physico-Chimie Biologique (1954), 51, 759-68  
 CODEN: JCPBAN; ISSN: 0021-7689  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

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 AB A gas containing 94% CO and 6% H is mixed with O, 1.5-2.0 times the equivalent to oxidize the H, and passed through Cu heated at 260°; this converts 50% of the H into H<sub>2</sub>O. The conversion of CO to CO<sub>2</sub> was 6%. The use of Ni, Pd, Pt, or C or their mixture is also specified.

ACCESSION NUMBER: 1955:10072 CAPLUS  
 DOCUMENT NUMBER: 49:10072  
 ORIGINAL REFERENCE NO.: 49:20541  
 TITLE: Removing of hydrogen from carbon monoxide  
 INVENTOR(S): Horiuchi, Juro; Watanabe, Yoshihiro  
 PATENT ASSIGNEE(S): Sumitomo Chemical Industries Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 29002424		19540504	JP	

L38 ANSWER 484 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB cf. C.A. 44, 915b; 45, 1858d, 4761d, 5046c, 5501d; 46, 8944h. A continuation of work on the effect of free radicals in catalysis based on the scheme  $MX + m \rightarrow m^* + M$ , where M is an adsorption center on the metal surface, MX a superficial complex between M and a mol. fragment X, m a mol. of the monomer and m\* an activated mol. of the monomer.

Techniques were those normally used in the study of gas adsorption on the surfaces of solids and of catalytic reactions in the liquid phase. Reactions studied were (1) polymerization of Me methacrylate (I) by means of adsorption of CO on metal surfaces (Pt and Ru catalysts); (2) I polymerization with adsorption of N<sub>2</sub> on Os; (3) vinyl polymerization in atmospheric of CH<sub>4</sub>, C<sub>2</sub>H<sub>4</sub>, and C<sub>2</sub>H<sub>2</sub> with postulated formation of radicals of the type CH<sub>3</sub>, and CH, with a Ni catalyst; and (4) cathodic polymerization of I with various cathode-anode combinations of Pt, Pd, Ni, Cu, Zn, Pb, and Hg. Under (1) the amount of polymer (II) produced is a linear function of the quantity of metal used, proof of the superficial nature of the effect observed. In the absence of the CO no action occurs. Because of the high mol. weight of the polymer, analysis of the terminal groups was impossible, but the formation of MCOH through reaction of the carbonyl MCO with H<sub>2</sub>O is postulated, whose action on the monomer is  $MCOH + RCH:HCR' \rightarrow MCO + RCH_2.H^*CR$ . In (4) is obtained further proof that metals loaded cathodically with atomic H are capable of initiating polymerization reactions. The amount of II obtained is not a direct function of c.d., rather an optimum c.d. is indicated at which maximum amount of polymer is produced.

ACCESSION NUMBER: 1954:44918 CAPLUS  
 DOCUMENT NUMBER: 48:44918  
 ORIGINAL REFERENCE NO.: 48:80071,8008a-c  
 TITLE: Free radicals and heterogeneous catalysis  
 AUTHOR(S): Parravano, G.  
 CORPORATE SOURCE: Princeton Univ., Princeton, NJ  
 SOURCE: Chimica e l'Industria (Milan, Italy) (1954), 36, 85-90  
 CODEN: CINMAB; ISSN: 0009-4315  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 485 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The exchange reaction between NH<sub>3</sub> and D is studied on evaporated films of Pt, Rh, Pd, Ni, W, Fe, Cu, and Ag by use of a mass spectrometer. The initial product was always NH<sub>2</sub>D, the other deuterio compds. forming successively. The relative concns. of the deuterioammonias were the same for all cases. This is because only one H is exchanged at a time. The energies of activation are given, and these correlate with the work functions of the metals. The mechanism is discussed. Catalysis of the reaction by films of oxidized Cu, W, Ni, and Zn and by ZnO is studied.

ACCESSION NUMBER: 1952:64947 CAPLUS  
 DOCUMENT NUMBER: 46:64947  
 ORIGINAL REFERENCE NO.: 46:10820e-g  
 TITLE: Catalysis on evaporated films. I. The efficiency of different metals for the reaction between ammonia and deuterium  
 AUTHOR(S): Kemball, C.  
 CORPORATE SOURCE: Cambridge Univ., UK  
 SOURCE: Proc. Roy. Soc. (London) (1952), A214, 413-26  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 486 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A cursory review of the use of S, Pd, Ni, Zn, and Se as dehydrogenating agents is presented. When cyclohexanol is mixed with S and heated to 150-5° for 6 hrs., the products are cyclohexene (I), phenol (II), and a large quantity of resinous material. In a similar experiment in which Mg trisilicate, Mg4Si3O10 (III), is added to the reaction mixture the products identified are I, and a small amount of H2S; II is absent. With or without III, dehydration occurs prior to reaching the higher temperature at which dehydrogenation begins. A series of expts. are performed in which 10 g. cyclohexanone, 6 g. S, and 3 g. various silicates are mixed and heated under reflux at 150°. The extent of dehydrogenation, based on the quantity of H2S evolved, is found to be 30% with no silicates present, 49% with Ca silicate, 50% with Al silicate, and 70% with Mg silicate (uncalcined). With 3,4-dihydro-1(2H)-naphthalenone under similar conditions, Mg silicate effected 37.5% dehydrogenation at 200°. Camphor did not undergo dehydrogenation, while menthone showed only 4% in the presence of III, and no dehydrogenation in the absence of III.

ACCESSION NUMBER: 1950:27332 CAPLUS  
 DOCUMENT NUMBER: 44:27332  
 ORIGINAL REFERENCE NO.: 44:5319h-i,5320a  
 TITLE: The dehydrogenating action of sulfur. I. Upon cyclohexanol. II. Upon several ketones  
 AUTHOR(S): Charonnat, R.; Girard, M.  
 CORPORATE SOURCE: Faculty Pharmacy, Paris  
 SOURCE: Bulletin de la Societe Chimique de France (1949) 208-9,209-11  
 CODEN: BSCFAS; ISSN: 0037-8968  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 487 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Derivs. of the series having a 14,15-unsatn. are treated with peroxy acids to form 14,15-oxido compds., such as Me 3(β)-acetoxy-14,15-oxido-Δ16-etiolocholesterol (I), 3(β),21-diacetoxy-14,15-oxido-20-keto-Δ16-allopregnene (IIa), 3,12-dihydroxy-14,15-oxidocholesterol or 3,12-dihydroxy-14,15-oxido-17-isocholanic acid, or the hydroxides of (β)-ergosterol and (β)-cholesterol. The 14,15-oxido compds. are reduced in various ways such as with H in the presence of a solvent and a metallic catalyst (Pt, Pd, Ni, Cu), with nascent H, or with an alcoholate (Al, Mg) of a secondary alc., etc., also by addition of a metallic organic compound, forming a tertiary OH group on C-14 while the organic residue of the organo metal compound simultaneously enters the C-15 position. Thus 20 g. I (from Me 3(β)-acetoxy-3(β)-etiolocholesterol in CCl4 treated with bromosuccinimide while exposed to light, the succinimide and solvent removed, the HBr split off with pyridine, and the product reacylated and oxidized with BzO2H in CHCl3) is reduced in 500 g. EtOH with 0.7 g. Pt (from PtO) in a H atmospheric; filtration, evaporation to dryness, and purification over Al2O3 yields mainly 2 isomeric Me 3(β)-acetoxy-14-hydroxyetiolocholestanolates, m. 204.5-5.5° and 148.5-50°, resp., separated from one another and from other by-products by chromatography over Al2O3, from which the 1st one is eluted with petr. ether-C6H6 (1:1) and the other with C6H6-Et2O. Similarly Me 3(α),12(α)-diacetoxy-14-hydroxycholestanol, m. 128-9°, is obtained from Me 3(α),12(α)-diacetoxy-14,15-oxidocholestanol which in turn is obtained from Me 3(α),12(α)-diacetoxy-Δ14-cholestanol with BzO2H in CHCl3. Similarly Me 3(β)-acetoxy-14-hydroxy-17-isoeetiolocholestanol, m. 148.5-50°, is obtained from Me 3(β)-acetoxy-14,15-oxido-17-isoeetiolocholestanol (II), which is prepared from Me 3(β)-acetoxy-Δ16-etiolocholesterol by refluxing in CCl4 with bromosuccinimide and exposure to light, removing the succinimide, and boiling with pyridine; purification yields first Me 3(β)-acetoxy-Δ14,16-etiolocholestanol (III), m. 148.5-50.5°, and oxidation of III with BzO2H and purification then yields I, m. 115-17°, hydrogenated in EtOH with a Pd-CaCO3 catalyst to II, m. 183-4°. Reduction of 3(β)-acetoxy-14,15-oxido-20-keto-Δ16-allopregnene (IV) in 150 cc. EtOH with H in the presence of 0.03 g. Pt, filtration, evaporation to dryness, and addition of 4 parts by volume of glacial AcOH and 0.2 g. CrO3 in 4 parts glacial AcOH yields on pouring after 20 hrs. at 20° into H2O and working up, 3(β)-acetoxy-20-keto-17-iso-5,14-diallopregnane, m. 104-6°, and 3(β)-acetoxy-14-hydroxy-17-iso-20-ketoallopregnane, m. 165-6°, [α]D -39°. IV is prepared from 3(β)-acetoxy-20-keto-Δ16-allopregnene by treating with bromosuccinimide to yield first 3(β)-acetoxy-20-keto-Δ14,16-allopregnadiene, m. 170-1°, which is oxidized with o-HO2CC6H4CO3H to IV, m. 193-5°. Similarly Ia, needles, m. 154-5° (from 3(β),21-diacetoxy-20-ketoallopregnene in CCl4 and glacial AcOH) with Br and AlCl3 yields 3(β),21-diacetoxy-17-bromo-20-ketoallopregnane, m. 144-5°, which after boiling with pyridine yields 3(β),21-diacetoxy-20-keto-Δ16-allopregnene (VI), m. 126-7°. VI with bromosuccinimide and light and boiling with pyridine yields 3(β),21-diacetoxy-20-keto-Δ14,16-allopregnadiene, m. 117-18°. Oxidation with o-HO2CC6H4CO3H yields Ia, used as a pharmaceutical or intermediate.

L38 ANSWER 487 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 ACCESSION NUMBER: 1950:15214 CAPLUS  
 DOCUMENT NUMBER: 44:15214  
 ORIGINAL REFERENCE NO.: 44:3044c-1,3045a-b  
 TITLE: Derivatives of the polyhydrocyclopentanophenanthrene series  
 PATENT ASSIGNEE(S): C I B A Ltd.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 623586		19490519	GB	

L38 ANSWER 488 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Monoethers of 3,4-(HO)2C6H3R (R = CH2CH=CH2 or CH=CHMe) in an alkali carbonate solution can be converted to the monocarbonates by COCl2 and then hydrogenated in the presence of Pd, Ni, Cu, or Cu-Cr to 1,3,4-PrC6H3(OH)2 monocarbonates (I). Thus isochavibetol 500 in a 20% alc. solution of Na2CO3 2000 g. was converted with COCl2 to the carbonate, which, after washing with NaOH and freeing from unreacted isochavibetol, crystallized from Me2CO in white needles, m. 166-6.5° (yield 85%); 300 g. of this in 600 g. EtOH was reduced with H in the presence of Pd to a I, m. 65-5.5°, was obtained. Similarly from eugenol a I, m. 65-5.5°, was obtained.

ACCESSION NUMBER: 1949:22746 CAPLUS  
 DOCUMENT NUMBER: 43:22746  
 ORIGINAL REFERENCE NO.: 43:4299a-c  
 TITLE: 1-Propyl-3,4-dihydroxybenzene monocarbonate  
 INVENTOR(S): Ono, Kashichi  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 161894		19440219	JP	

L38 ANSWER 489 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Into a tube filled with Cu, Ni, Pd, or Pt covered with PbCrO<sub>4</sub> or SnCrO<sub>4</sub> was passed a mixture of C<sub>2</sub>H<sub>2</sub> and H at 160-200° to give C<sub>2</sub>H<sub>4</sub> (purity 92-4, yield 87-95%).  
 ACCESSION NUMBER: 1949:19958 CAPLUS  
 DOCUMENT NUMBER: 43:19958  
 ORIGINAL REFERENCE NO.: 43:38331,3834a  
 TITLE: Ethylene from acetylene  
 PATENT ASSIGNEE(S): Hododani Chemical Industries Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 153870		19421126	JP	

L38 ANSWER 490 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Catalytic hydrogenation of a solution of ergotamine (I) at elevated H pressure and temperature yields dihydroergotamine (II), a compound of therapeutic value. Thus, when 10 g. ergotamine-acetone complex in 150 cc. dioxane is shaken with 5 g. Pd black under 20 atmospheric H at 20° 4 hrs., then under 26 atmospheric at 60° 4 hrs. longer, II crystallizes out; filtered, dissolved free of catalyst in CHCl<sub>3</sub>-EtOH, concentrated, and recrystd. from 90% acetone, it yields 8.5-9 g. pure I (crystallizing with 2 mols. H<sub>2</sub>O and 2 mols. acetone per mol. of II), m. 237° (corrected), [α]<sub>D</sub>20D -63° (c 0.6, pyridine). Either Pd on BaSO<sub>4</sub> or on another carrier, colloidal Pd, Ni, or Cu-Ni is a suitable catalyst. Temperature and pressure may be varied, using higher temps. at lower pressures, e.g., 20 atmospheric at 50°, 80 at 25°, 10 at 80°. Any solvent not conducive to mol. rearrangement of the product may be used. Hydrogenation of other ergot alkaloids is also possible by the described method. With organic and inorg. acids II forms stable salts: dihydroergotamine tartrate, m. 205° (corrected) (from 95% MeOH); dihydroergotamine methanesulfonate, m. 233° (corrected) (from 95% EtOH).

ACCESSION NUMBER: 1948:34433 CAPLUS  
 DOCUMENT NUMBER: 42:34433  
 ORIGINAL REFERENCE NO.: 42:7343d-f  
 TITLE: Dihydroergotamine  
 PATENT ASSIGNEE(S): Sandoz Ltd.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CH 220342		19420331	CH	

L38 ANSWER 491 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A natural petroleum-oil fraction which boils between 95 and 180° is converted into a liquid mixture of aromatic substances by subjecting the starting material to the action of a hydrogenation and dehydrogenation catalyst, at a temperature of 500-750°, and at a space velocity of 0.1-0.5 l. of liquid as vapor per 1. active catalyst volume per hr. Brit. 575,768 describes a process for converting "C. V. R. benzole" into a substantially completely aromatic product. The process involves submitting the starting material in the form of its vapor to the action of a metallic catalyst, at a temperature of 600-700°, at a space velocity of 0.05-1.0 l. of liquid as vapor per 1. active catalyst volume per hr., and preferably at atmospheric pressure. Brit. 575,769 deals with a process for the production of aromatic compds. from solvent naphtha. The solvent naphtha having a boiling range of 130-200° is converted into benzene, toluene, ethylbenzene, styrene, and xylene, by submitting the starting material in the form of its vapor to the action of a metallic hydrogenation-dehydrogenation catalyst or catalysts, at a space velocity of 0.05-1.0 l. of liquid as vapor per 1. active catalyst volume per hr., at a temperature of 600-700°, preferably at atmospheric pressure. Brit. 575,770 deals with the aromatization of mineral oils and other liquid hydrocarbons. The process consists of the following features employed in combination, namely: (a) the starting materials are used in the form of their vapor phase, and in the absence of diluent or reacting gases; (b) the process is carried out in the presence of a hydrogenation-dehydrogenation catalyst consisting of a free metal or metals selected from the group Co, Cu, Cr, Fe, Mn, Mo, Ni, Pd, Pt, Ag, W, and V, their mech. mixts. or their alloys; (c) the process is carried out under pressure conditions substantially higher than atmospheric pressure; (d) the reaction range temperature is 500-800°; and (e) the space velocity is within the range 0.05-1.0 l. of liquid as vapor per 1. volume of the active part of the aforesaid metallic catalyst mass per hr. Brit. 575,771 deals with the conversion of natural petroleum oil fractions, of which substantially the whole boils within the range 150-250°, into products comprising a liquid mixture of aromatic substances. The process involves subjecting the aforesaid starting material to the action of a hydrogenation and dehydration catalyst, at a temperature of 500-750° and at a space velocity of 0.1-0.5 l. of liquid as vapor per 1. active catalyst volume per hr. Cf. C.A. 40, 3252.9.  
 ACCESSION NUMBER: 1947:33469 CAPLUS  
 DOCUMENT NUMBER: 41:33469  
 ORIGINAL REFERENCE NO.: 41:6704a-f  
 TITLE: Aromatic compounds  
 INVENTOR(S): Weizmann, Charles  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 575766		19460305	GB	

L38 ANSWER 492 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 GI For diagram(s), see printed CA issue.  
 AB The preparation of 3,4-diamino-5-methyltetraone (I), MeCH<sub>2</sub>O.CO.C(NH<sub>2</sub>).CNH<sub>2</sub> (cf. C.A. 32, 113.6), its hydrogenation product, α,β-diamino-γ-methylbutyrolactone (II), and 3-amino-4-hydroxy-5-methyltetraone (III) was carried out with the aim of using them as starting materials in the synthesis of biotin model compds. Hydrogenation of the double bond in I and its monacyl derivs. was not achieved with Pd-Ni and Cu-Cr oxide at high temperature and pressure but only when using diacyl derivs. (acyl = Ac, Bz, C<sub>6</sub>H<sub>11</sub>CO, and EtOCO). Saponification of the diacyl derivs. with concentrated HBr solution to II was successful only with the di-Bz (IV) and di-C<sub>6</sub>H<sub>11</sub>CO (V) derivs. of I. Since the yields were poor because of elimination of NH<sub>3</sub>, cyclization to imidazolidone derivs. was not attempted. Reaction of (monisolated) III with KCNO did not give the expected imidazolidone derivative but led to 3-ureido-4-hydroxy-5-methyltetraone (VI) which was resistant to ring closure under the influence of mineral acids. Reaction of I with urea gave 3-ureido-4-amino-5-methyltetraone (VIA) which was also obtained from I and KCNO. It was equally impossible to obtain ring closure with COCl<sub>2</sub> and I, the reaction product being 3,3'-ureylenebis(4-amino-5-methyltetraone) (VII). PhNH<sub>2</sub> (74 g.) in 650 cc. 3 N HCl was diazotized with 58 g. NaNO<sub>2</sub> in 60 cc. H<sub>2</sub>O at 0° and the solution then added dropwise to 74 g. tetrionic acid (C.A. 5, 3256) and 52 g. K<sub>2</sub>CO<sub>3</sub> in 200 cc. ice-cold H<sub>2</sub>O while stirring, which was continued 3 h.; the solution was filtered, and the residue washed with H<sub>2</sub>O; yield, 110 g. crude phenylhydrazone of γ-methyl-α-hydroxydehydrotetronic acid (3-phenylhydrazone of 5-methyl-2,3,4-furantrione) (VIII), crystals from alc., m. 145-7°. The 3,4-bis(phenylhydrazone) (IX), dark red crystals from CHCl<sub>3</sub> + alc., m. 176-7°, was obtained from 208 g. VIII in 1000 cc. hot glacial AcOH and 110 g. PhNHNH<sub>2</sub> in 350 cc. hot 3 N AcOH; yield, 277 g. The 4-oxime of VIII, crystals from alc., m. 190-3°, was obtained from 3 g. VIII in 20 cc. glacial AcOH and 1.9 g. HOHNH<sub>2</sub>.HCl in a little H<sub>2</sub>O on the water bath. I, crystals from alc., m. 175-8°, was obtained by hydrogenating 277 g. IX in 1000 cc. MeOH in the presence of 120 g. Pd-charcoal (77 g. charcoal:1 g. Pd) in a shaking autoclave at an initial pressure of about 70 atmospheric. The hydrogenation was completed within 5 min. at 80-90°, the temperature being finally raised to 140-50° for a short time. After cooling and filtration, the solution was evaporated in vacuo to half its volume I crystallized on cooling. The evaporation was repeated 2-3 times and PhNH<sub>2</sub> finally removed by steam; yield, 77 g. Condensation of I in a little alc. with phenanthrenequinone in little glacial AcOH gave a quinoxaline derivative (X), yellow needles from CHCl<sub>3</sub> + alc., m. 271°. Benzoylation of I according to Schotten-Baumann in aqueous alkaline solution gave an N-mono-Bz derivative, crystals from alc., m. 215-17°. Slow addition of 2.5 g. ClCO<sub>2</sub>Et to 2 g. I in 10 cc. cold absolute C<sub>5</sub>H<sub>5</sub>N, heating to 120° (oil bath temperature) 1.5 h., and removal of volatile parts in vacuo gave an N-monocarbethoxy derivative, crystals from alc. or H<sub>2</sub>O, m. 176-8°; N-mono(benzoyloxycarbonyl) derivative (from I and ClCO<sub>2</sub>CH<sub>2</sub>Ph) crystals from alc.,

L38 ANSWER 492 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 m. 131-37; N-monobenzylidene deriv. (XI), crystals from C<sub>6</sub>H<sub>6</sub>, m. 154-57; N-monobenzyl deriv., crystals from alc., m. 137-9° was obtained by hydrogenation of XI over Raney Ni. 3,4-dibenzamido-5-methyltetrone (XII), crystals from CHCl<sub>3</sub> + alc., m. 190-2°, was obtained in a 26-g. yield by adding slowly 55 cc. BzCl to 20 g. I in 135 cc. abs. C<sub>5</sub>H<sub>5</sub>N and warming 6 h. at 125° (oil bath temp.). XII was also obtained by heating I with excess BzCl at 120-30° 6-8 h.; 10 g. I in 60 cc. abs. C<sub>5</sub>H<sub>5</sub>N and 35 g. C<sub>6</sub>H<sub>11</sub>COCl at 130° (oil bath temp.) 5 h. gave 11 g. 3,4-bis(hexahydrobenzamido)-5-methyltetrone (XIII), crystals from alc., m. 136-7°. 3,4-Diacetamido-5-methyltetrone (XIV), crystals from alc., m. 148-50°, was prepd., from 20 g. I and 150 cc. AcCl at 80° (oil bath temp.) 5 h., in 26.4-g. yield and 3,4-bis(carbethoxyamino)-5-methyltetrone, crystals from alc. or H<sub>2</sub>O, m. 118-19°, from 20 g. I in 300 cc. ClCO<sub>2</sub>Et at 110° (oil bath) 22 h. in 37-g. yield. On hydrogenation of 14.1 g. XIV in 100 cc. MeOH in the presence of 5 g. Raney Ni at an initial pressure of about 120 atm. at 125° 3 h., cooling, filtration of the catalyst, and evapn. of the soln. in vacuo, α,β-diacetamido-γ-methylbutyrolactone (XV), crystals from alc., m. 219-20°, pptd.; an isomer (XVI), m. 206-8°, was obtained by dissolving the oily mother liquor in a little MeOH and adding Et<sub>2</sub>O. α,β-Dibenzamido-γ-methylbutyrolactone (IV), crystals from alc., m. 211-14°, was obtained by hydrogenating 1 g. XII in 60 cc. MeOH in the presence of 2 g. Raney Ni at an initial pressure of about 40 atm. at 100-106° in 250 min. From the filtrate, an isomer, crystals from aq. alc., m. 180-3°, crystd. after 3 days. Hydrogenation of 24.3 g. XII in 150 cc. MeOH with 10 g. Raney Ni at an initial pressure of about 147 atm. at 110-23° 4 h. gave α,β-bis(hexahydrobenzamido)-γ-methylbutyrolactone (V), m. 222-3°; the mother liquor on addn. of H<sub>2</sub>O, and cooling overnight in an ice-box gave benzamido(hexahydrobenzamido)-γ-methylbutyrolactone, crystals from alc., m. 180-3°. V was also obtained from 11 g. XIII in 80 cc. MeOH with 5 g. Raney Ni at an initial pressure of about 140 atm. at 140° 5 h.; there was also isolated a more completely hydrogenated product, needles from CHCl<sub>3</sub> + Me<sub>2</sub>CO, m. 242-3°; an isomer of V, m. 208-9°, was obtained after evapn. the mother liquor, dissolving the residue in a little alc., and adding H<sub>2</sub>O. Sapon. of 3 g. V by heating with 10 cc. 60% HBr soln. at 100° 3 h. in a tube gave a very small yield of II.2HBr which did not m. up to 350°. The analogous sapon. of IV gave also a small amt. of crystals. XV and XVI gave with a little concd. aq. NH<sub>3</sub> α,β-diacetamido-γ-hydroxyvaleramide, crystals from alc., m. 239-41°, which with Ac<sub>2</sub>O in C<sub>5</sub>H<sub>5</sub>N on stirring 18 h. at 65° gave α,β-diacetamido-γ-acetoxvaleramide, crystals from MeOH, m. 245°. 3-Nitro-4-hydroxy-5-methyltetrone, crystals from Me<sub>2</sub>CO + CHCl<sub>3</sub>, m. 87°, obtained by introducing 10 g. dry 5-methyltetronic acid portionwise into 40 g. fuming HNO<sub>3</sub> at -5° and keeping the mixt. under a hood about 6 h., gave VI, crystals from alc. or H<sub>2</sub>O, m. 218-20°, on hydrogenation in HCl with Pd-charcoal at ordinary pressure and temp., followed by treatment with KCNO and dil. HCl. VII, m. 247°, was prepd. from equimol. amts. of I and urea at 150°, or from I, KCNO, and dil. HCl. VII, pptd. by shaking I in aq. alk. soln. with a soln. of COCl<sub>2</sub> in toluene (20%) for a prolonged period of time, crystd. from H<sub>2</sub>O as the monohydrate, m. 256°; the H<sub>2</sub>O was not removed by heating to 125°/10 mm.

ACCESSION NUMBER: 1947:18929 CAPLUS

L38 ANSWER 492 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 DOCUMENT NUMBER: 41:18929  
 ORIGINAL REFERENCE NO.: 41:3788f-i, 3789a-i, 3790a-c  
 TITLE: Model experiments in the synthesis of biotin  
 AUTHOR(S): Spiegelberg, Hans; Kirchensteiner, Hans  
 CORPORATE SOURCE: Hoffmann-La Roche & Co., A.-G., Basle  
 SOURCE: Jubilee Vol. Emil Borell (1946) 149-63  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

L38 ANSWER 493 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The following uses are briefly discussed: Pt catalysts for (1) ammonia oxidation, (2) contact process for H<sub>2</sub>SO<sub>4</sub>, (3) hydrogenations, (4) lighters and heaters; use of Pt alloys for elec. contacts, spark plugs, resistance windings, lamps and electron tubes, and pyrometry; design and manufacture of spinnerets for artificial silk and glass fiber; application of metals of Pt family to jewelry and dentistry. Tables of various phys. properties of Ru, Rh, Pd, Os, Ir, Pt are given. Characteristics of some Pd alloys with Au, Ag, Ru, and Rh and of some Pt alloys with Ir, Rh, Ni, Pd, Ru, Cu, and Au are given, including tensile strengths.  
 ACCESSION NUMBER: 1946:6588 CAPLUS  
 DOCUMENT NUMBER: 40:6588  
 ORIGINAL REFERENCE NO.: 40:1125d-f  
 TITLE: Some industrial uses of the platinum metals  
 AUTHOR(S): Rhodes, E. C.  
 SOURCE: J. Birmingham Metal Soc. (1945), 25, 132-67  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 494 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB cf. C. A. 36, 380.2. In a continuation of the study of the mixed catalysts Cu-Ni, Cu-Pd and Cu-Pt in their splitting of HCOOH (dehydration) and the hydration of C<sub>2</sub>H<sub>2</sub>, all of these alloys form continuous series of solid solns. with cubic face-centered lattices. In all cases, Cu is the element of least activity. Additivity is not found, and in all the systems 2 groups were distinguished which approach the properties of the pure components. By varying the composition of the mixts., from alloy to alloy, and reaction to reaction, a fairly definite source of activity in the catalysts is indicated. By the addition of kieselguhr as a support for the catalyst, the activity was increased for the pure components, but there was little or no increase with mixed catalysts. An influence of the state of combination of an atom was found in the fact that catalysts of the ordered type of lattice were more effective than those of the disordered type.  
 ACCESSION NUMBER: 1942:26659 CAPLUS  
 DOCUMENT NUMBER: 36:26659  
 ORIGINAL REFERENCE NO.: 36:4077a-d  
 TITLE: Catalytic investigations of alloys. X. The catalytic activity of alloys of copper with nickel, palladium and platinum  
 AUTHOR(S): Rienacker, G.  
 SOURCE: Zeitschrift fuer Elektrochemie und Angewandte Physikalische Chemie (1941), 47, 805-9  
 CODEN: ZEAPAA; ISSN: 0372-9323  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 495 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Good yields of thiophene can be obtained by causing C2H2 and H2S to react at a high temperature in presence of a catalyst comprising a water-insol. and water-stable metallic sulfide or mixts. of sulfides, e. g., those of Pb, Mn, Cu, Ag, Sb, Sn, Bi, Mo, W, U, Fe, Co, Ni, Pd and Pt. Particularly good yields of thiophene are obtained when the catalyst comprises PbS and(or) MnS. The reaction is effected at a temperature ranging from 500° to 750°. The ratio of C2H2 to H2S to be used is less than 2:1, preferably between 4:3 and 2:3.

ACCESSION NUMBER: 1942:8276 CAPLUS  
 DOCUMENT NUMBER: 36:8276  
 ORIGINAL REFERENCE NO.: 36:1338c-d  
 TITLE: Thiophene  
 INVENTOR(S): Arnold, Michael H. M.  
 PATENT ASSIGNEE(S): Imperial Chemical Industries Ltd.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 535583		19400415	GB	

L38 ANSWER 496 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB cf. C. A. 35, 3513.3,3513.5. Data are given for dehydrogenation of heptane on various two-component gel preps. consisting of Cr2O3 and Pd, Ni, Cu, ZnO, MoO2, MnO, SiO2, ZrO2 or SnO2. The data indicate that incorporation of the hydrogenating oxide catalysts, Sn, Mn and Mo oxides produces catalysts that tend to favor low olefin content with a given production of aromatics. Incorporation of silica does not materially increase gel stability but produces greater availability of the Cr2O3 surface. Incorporation of Zr and Sn oxide as promoters produces catalysts superior to the standard gel because of slower rate of poisoning. The catalysts are somewhat sensitive to the revivification procedure and lose activity. Zirconia has dehydrogenating-cyclizing activity toward paraffins at 475°.

ACCESSION NUMBER: 1941:27041 CAPLUS  
 DOCUMENT NUMBER: 35:27041  
 ORIGINAL REFERENCE NO.: 35:42701,4271a-b  
 TITLE: Two-component gel catalysts containing chromium oxide for the aromatization of heptane  
 AUTHOR(S): Fehrer, Harold; Taylor, Hugh S.  
 SOURCE: Journal of the American Chemical Society (1941), 63, 1385-6  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 497 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The activation energy (a. e.) of the decomposition of gaseous formic acid in the presence of Bi catalyst is a function of the dispersion of the Bi, being greater when the Bi is in compact form. The catalytic activity of Ni sheet depends on its history: annealed sheet has a lower a. e. than sheet rolled after annealing. Comparing the a. e. in the decomposition of HCOOH with the a. e. in the hydrogenation of C2H4, using annealed catalysts (Ni, Pd, Pt, Cu, Ag, Au), there is no apparent correlation with the crystal lattice of the metals or with any other property of the metals.

ACCESSION NUMBER: 1941:27039 CAPLUS  
 DOCUMENT NUMBER: 35:27039  
 ORIGINAL REFERENCE NO.: 35:4270d-e  
 TITLE: The activation energy in heterogeneous catalysis  
 AUTHOR(S): Rienacker, Gunther  
 SOURCE: Zeitschrift fuer Elektrochemie und Angewandte Physikalische Chemie (1940), 46, 369-73  
 CODEN: ZEAPAA; ISSN: 0372-8323  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 498 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In a cyclic process for the production of peroxides, e. g., of alkali metals or H, by subjecting organic compds. that are oxidizable by O2 under ordinary conditions in a liquid medium to such oxidation, with the formation of peroxides, separating the bulk of the peroxides formed from the reaction liquid and catalytically reducing the organic oxidation products to the initial organic compds., an essential part of the remainder of the peroxide and O dissolved in the reaction liquid is removed prior to the reduction. This may be effected by treating the reaction liquid prior to the reduction with oxidizable substances, e. g., FeSO4, MnSO4, an alkaline suspension of Fe(OH)2 or with substances that bind peroxides, e. g., NaOH, NaBO2, Na2CO3, or with a catalyst that decomposes peroxides, e. g., Fe, Ni, Cu, Ag, Pt, Pd, PBO. The decomposition may be effected in conjunction with the removal of dissolved O by conducting the treatment with the decomposing catalyst in the presence of the reduced operating substance, which may be provided by not completing the preceding oxidation step or by branching off a portion of the reduced reaction liquid from the main cycle. The latter method of operation may be modified by treating the liquid with the decomposing catalyst in the absence of reduced operating substance, but in the presence of H and a reducing catalyst, e. g., Pd, Ni. The reducing catalyst may also serve as a decomposing catalyst. Dissolved O may also be removed by reducing the O pressure over the reaction liquid, e. g., by contact with an indifferent gas, e. g., H, or by reducing the pressure. The resulting mixture containing solvent vapor and O may be treated with a solution of the reduced operating substance, which, by the absorption of O, restores the indifferent gas for further use in the process. The gas mixture containing expelled O may also be sucked off by means of a jet pump operated by the solution of reduced operating substance. A plurality of the above methods may be used. An example gives a solution of 2-ethylantraquinone in a mixture of C6H6 and methylcyclohexanol as the operating substance.

ACCESSION NUMBER: 1940:3818 CAPLUS  
 DOCUMENT NUMBER: 34:3818  
 ORIGINAL REFERENCE NO.: 34:595a-e  
 TITLE: Peroxides  
 PATENT ASSIGNEE(S): I. G. Farbenindustrie A.-G.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 508081		19390623	GB	

L38 ANSWER 495 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In removing CO from combustible gases, e. g., coal gas, by steam catalysis preceded by passage with O over Fe purifying masses, damage to the catalyst used in the steam catalysis by the O still remaining in the gas mixture is inhibited by combination of the O at a preliminary catalyst of different composition from the main catalyst used for the CO conversion. The preliminary catalyst specified comprises Cu, Pt, Pd, Ni or metal oxide and the main catalyst, Fe-Cr.  
 ACCESSION NUMBER: 1939:9805 CAPLUS  
 DOCUMENT NUMBER: 33:9805  
 ORIGINAL REFERENCE NO.: 33:1478c-d  
 TITLE: Removing carbon monoxide from gases  
 INVENTOR(S): Brandt, Richard  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 490920		19380823	GB	

L38 ANSWER 500 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Vinylacetylene (I) is caused to react with H in the presence of a hydrogenation catalyst and in the presence or absence of a solvent, oily constituents of a C content higher than C being isolated from the solvent or the reaction gases. Suitable catalysts comprise Pd, Ni, Pt, Co, Cu, Ru and Fe. Partially or completely hydrogenated products are obtained according to reaction conditions. Strongly unsatd. oils may be further hydrogenated. The unsatd. oils may be separated into fractions of different boiling ranges or may be further polymerized to oily or resinous products that can also be hydrogenated. They are used as drying oils, absorbing O to form films of the linolein type. Driers, softening agents and other known varnish or lacquer materials may be added. Among examples, a mixture of I and H in the ratio 3:2 is passed into a column of liquid, e. g., iso-PROH, containing Pd on a finely distributed carrier and, if desired, a substance that accelerates the gas distribution, e. g., a hydroxyalkylamine; the oily condensation product is removed in the liquid and separated by adding H<sub>2</sub>O, salt solution, a polyhydric alc. or the like.  
 ACCESSION NUMBER: 1938:21800 CAPLUS  
 DOCUMENT NUMBER: 32:21800  
 ORIGINAL REFERENCE NO.: 32:3058h-i, 3059a  
 TITLE: Vinylacetylene condensation products  
 PATENT ASSIGNEE(S): I. G. Farbenindustrie A.-G.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 474234		19371025	GB	

L38 ANSWER 501 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB There are two types of dehydrogenation catalysts depending on the orientation of mols. on the catalytic surface. The first type catalyzes reactions at about 300° and includes Pt, Pd, Ni and other metals that crystallize in the hexagonal or cubic system. These cause dehydrogenation only of six-membered rings and form directly aromatic nuclei. The second type operates at about 450° and includes metallic oxides such as those of Cr, Mo, Zn and Ti. The crystal structure of type I is not required and they may dehydrogenate other than six-membered rings. From such compds., catalysts of this type may, however, give intermediate products such as cyclohexene or cyclohexadiene. The kinetics of the dehydrogenation of cyclohexane on Cr and Mo oxides were studied. The reaction proceeds according to the theory of Langmuir. At 400°, the time of stay of cyclohexane on the catalytic surface is 2.5 times as long as that of C<sub>6</sub>H<sub>6</sub>, the end product. The true activation energy of dehydrogenation lies between 20,000 and 40,700 cal. per mol.  
 ACCESSION NUMBER: 1937:4654 CAPLUS  
 DOCUMENT NUMBER: 31:4654  
 ORIGINAL REFERENCE NO.: 31:600f-h  
 TITLE: Molecular orientation and catalysis. Dehydrogenation of cyclohexane in the presence of chromic oxide  
 AUTHOR(S): Balandin, A. A.; Brussov, J. J.  
 SOURCE: Z. physik. Chem. (1936), B34, 96-120  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 502 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Ph<sub>4</sub>Pb (I) and Ph<sub>4</sub>Sn (II) undergo decomposition at 150° under the catalytic action of metal filings. In the absence of H the relative decreasing effects on the decomposition of I are represented by the series Pd, Au, Ag, Ni and under pressure of H by Pd, Ni, Au, Ag, Cu. Decomposition of II in presence of H is not observed at 150°, but is complete at 200° regardless of the nature of the catalyst. In the absence of H the decomposition is slight at 200°. The relative decreasing effects of catalysts in the case of II, in the absence of H, are Pd, Ag, Au, Ni; in the presence of H, Pd, Ni, Ag, Au and Cu. C<sub>6</sub>H<sub>6</sub> results from both I and II in the presence of Ni, while with Pd Ph<sub>2</sub> is formed; Au stimulates both reactions. In the absence of H Ph<sub>2</sub> is formed in all cases.  
 ACCESSION NUMBER: 1935:28254 CAPLUS  
 DOCUMENT NUMBER: 29:28254  
 ORIGINAL REFERENCE NO.: 29:3662b-c  
 TITLE: Catalytic decomposition of metallo-organic compounds. III. Compounds of lead and tin  
 AUTHOR(S): Koton, M. M.  
 SOURCE: Zhurnal Obshchei Khimii (1934), 4, 653-7  
 CODEN: ZOKHA4; ISSN: 0044-460X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 503 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Cf. C. A. 27, 5313-14. Pd accelerates decomposition of p-substituted  
 Ph<sub>2</sub>Hg in  
 the following increasing order: α-C<sub>10</sub>H<sub>7</sub>, MeC<sub>6</sub>H<sub>4</sub>, BrC<sub>6</sub>H<sub>4</sub>, EtOC<sub>6</sub>H<sub>4</sub>,  
 MeOC<sub>6</sub>H<sub>4</sub>, Ph, PhCH<sub>2</sub>. The compds. are first decomposed into metals and  
 radicals, the latter uniting at the surface of the catalyst to  
 Ph<sub>2</sub> compds. The relative speed of decomposition of (α-C<sub>10</sub>H<sub>7</sub>)<sub>2</sub>Hg is also  
 given by the above series; C<sub>10</sub>H<sub>8</sub> is formed at the expense of some C<sub>10</sub>H<sub>7</sub>  
 groups which are dehydrated to C. The relative effects of  
 catalysts in alc. are, in decreasing order: Pd,  
 Ni, Au, Ag, Cu; in tetralin Pd, Au, Ag  
 , Ni, Cu. In alc. (α-C<sub>10</sub>H<sub>7</sub>)<sub>2</sub>Hg gives RH compds.; all  
 other compds. treated give RH; in tetralin hydration alone is observed.  
 16 tables give the results of expts.  
 ACCESSION NUMBER: 1935:28253 CAPLUS  
 DOCUMENT NUMBER: 29:28253  
 ORIGINAL REFERENCE NO.: 29:36611,3662a  
 TITLE: Catalytic decomposition of metallo-organic compounds.  
 II  
 Razuvaev, G. A.; Koton, M. M.  
 Zhurnal Obshchei Khimii (1934), 4, 647-52  
 CODEN: ZOKH44; ISSN: 0044-460X  
 SOURCE: Journal  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 505 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Water gas (CO + H<sub>2</sub>) is being used as the basis for the synthesis of CH<sub>4</sub>,  
 alcs., fatty oils and other organic compds. The products obtained  
 depend on  
 the choice of catalyst, temperature, pressure and velocity of passing  
 the gases through the tube. Ni, Co, Cu and Fe, also the alloys  
 Ni-Co, Ni-Cu, Cu-Pd, Ni-Pt, Fe-  
 Ni-Pd and Cu-Co-Ni, oxides and mixts. of these  
 metals with hydroxides of alkali metals are good catalysts.  
 Temps. of 380° to 410° give the best yield of alcs.; above  
 450° more oils and acids and less alcs. are obtained, also much C  
 seps. out. The higher the pressure the fewer alcs. are formed; pressures  
 below 50 atmospheric favor the formation of alcs. The velocity of  
 passage also  
 influences the yield: higher velocities favor the formation of alcs.  
 ACCESSION NUMBER: 1933:38428 CAPLUS  
 DOCUMENT NUMBER: 27:38428  
 ORIGINAL REFERENCE NO.: 27:34421,3443a  
 TITLE: Water gas, basis for organic synthesis  
 AUTHOR(S): Pertiera, Jose M.  
 SOURCE: Quim. e ind. (1933), 10, 6-13  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 504 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB In testing different metals in finely porous condition for their  
 catalytic  
 activity in C<sub>2</sub>H<sub>4</sub> hydrogenation at 0-200° and atmospheric pressure the  
 following results were obtained (0 inactive, 3 strongly active): Na = 0;  
 K  
 = 0; Rb = 0 - 1; Cs = 2, Cu = 3, Ag = 0, Au = 0, Ca =  
 2, Sr = 2, Ba = 2, Zn = 0, Hg = 0, Al = 0, Tl = 0, C = 0, Pb = 0,  
 As = 0, Bi = 0, Cr = 3, Mn = 3, Re = 2, Fe = 2, Co = 3, Ni = 3, Pd = 3,  
 Pt  
 = 3. The active elements can be separated into 2 groups: (1) Cs, Ca,  
 Sr, Ba  
 of large atomic volume, low electron exit work, weak ion field, stable  
 hydrides, H functioning as neg. ion and (2) Cu, Cr, Mn, Re, Fe,  
 Co, Ni, Pd, Pt of small atomic volume, etc., H acting as  
 pos. ion. In group (1) the H activation takes place on the surface; in  
 group (2) it takes place in defective spots in the interior of the metal.  
 ACCESSION NUMBER: 1933:55756 CAPLUS  
 DOCUMENT NUMBER: 27:55756  
 ORIGINAL REFERENCE NO.: 27:4997c-d  
 TITLE: Different classes of hydrogenation catalysts  
 AUTHOR(S): Schmidt, Otto  
 SOURCE: Naturwissenschaften (1933), 21, 351  
 CODEN: NATWAY; ISSN: 0028-1042  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 506 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB When an Al electrode, freshly sanded, is placed in a solution of a  
 neutral  
 electrolyte such as KCl, the e. m. f. falls off rapidly during the first  
 15 or 20 mins., and a constant potential is finally reached 500 or 600  
 millivolts less than the initial e. m. f. If H<sub>2</sub> or N<sub>2</sub> be now bubbled  
 through the electrolyte around the electrode, the potential, after an  
 initial lag, gradually becomes more basic till a new constant e. m. f. is  
 obtained, 300-400 millivolts more basic than that in air. However, it is  
 not possible to raise the po-tential of the Al electrode up to the  
 initial  
 e. m. f. of 1.4 v., indicating that the gas and metal form a combination  
 gas-metal electrode with a specific potential of its own. The effect of  
 O<sub>2</sub>, N<sub>2</sub> and H<sub>2</sub> upon 25 different metals was studied, all of them forming  
 gas-metal electrodes. The metals, used were Al, Sb, As, Bi, Cd,  
 Cr, Co, Cu, Au, C (graphite), Fe, Pb, Mg, Mo, Hg, Ni,  
 Pd, Pt, Te, Si, Ag, Th, Sn, W and Zn. A few  
 expts. were made with CO, CH<sub>4</sub> and He. The results show in general that  
 gas-metal electrodes are specific for the particular metal and gas, and  
 are related to the absorbing power of the metal for the gas or for each  
 gas in case of a mixture. The total combination potential is due both to  
 absorbed gas and to a condensed film of gas on the surface of the metal.  
 O<sub>2</sub> tends to make the metal potentials less basic, while N<sub>2</sub> and H<sub>2</sub> have  
 the  
 opposite effect. Elements having amphoteric properties and variable  
 valences and which are known to function as catalysts show  
 greater change with N<sub>2</sub> and H<sub>2</sub> than do the more simple and pronouncedly  
 metallic elements. Helium has little effect on potentials, but on Pt and  
 Cd it has a small but definite effect. Coating the electrodes and  
 stirring the elec-trolyte have the same effect of preventing the  
 condensation of a gas film on the surface of the electrode. The most  
 constant electrodes are those which show the smallest difference between  
 their O<sub>2</sub> and N<sub>2</sub> potentials. The gas-metal electrode potential depends on  
 the gas dissolved in the electrolyte and not on that in the gas phase.  
 ACCESSION NUMBER: 1929:28943 CAPLUS  
 DOCUMENT NUMBER: 23:28943  
 ORIGINAL REFERENCE NO.: 23:3411a-e  
 TITLE: The nature of gas-metal electrodes  
 AUTHOR(S): French, Sidney J.; Kahlenberg, Louis  
 SOURCE: Metal Ind. (London) (1928), 33, 443-6, 543-5, 569-70  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 507 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB When an Al electrode, freshly sanded, is placed in a solution of a neutral electrolyte such as KCl, the e. m. f. falls off rapidly during the first 15 or 20 mins., and a constant potential is finally reached 500 or 600 millivolts less than the initial e. m. f. If H2 or N2 be now bubbled through the electrolyte around the electrode, the potential, after an initial lag, gradually becomes more basic till a new constant e. m. f. is obtained, 300-400 millivolts more basic than that in air. However, it is not possible to raise the po-tential of the Al electrode up to the initial e. m. f. of 1.4 v., indicating that the gas and metal form a combination gas-metal electrode with a specific potential of its own. The effect of O2, N2 and H2 upon 25 different metals was studied, all of them forming gas-metal electrodes. The metals, used were Al, Sb, As, Bi, Cd, Cr, Co, Cu, Au, C (graphite), Fe, Pb, Mg, Mo, Hg, Ni, Pd, Pt, Te, Si, Ag, Th, Sn, W and Zn. A few expts. were made with CO, CH4 and He. The results show in general that gas-metal electrodes are specific for the particular metal and gas, and are related to the absorbing power of the metal for the gas or for each gas in case of a mixture. The total combination potential is due both to absorbed gas and to a condensed film of gas on the surface of the metal. O2 tends to make the metal potentials less basic, while N2 and H2 have the opposite effect. Elements having amphoteric properties and variable valences and which are known to function as catalysts show greater change with N2 and H2 than do the more simple and pronouncedly metallic elements. Helium has little effect on potentials, but on Pt and Cd it has a small but definite effect. Coating the electrodes and stirring the elec-trolyte have the same effect of preventing the condensation of a gas film on the surface of the electrode. The most constant electrodes are those which show the smallest difference between their O2 and N2 potentials. The gas-metal electrode potential depends on the gas dissolved in the electrolyte and not on that in the gas phase.

ACCESSION NUMBER: 1929:28942 CAPLUS  
 DOCUMENT NUMBER: 23:28942  
 ORIGINAL REFERENCE NO.: 23:3411a-e  
 TITLE: The nature of gas-metal electrodes  
 AUTHOR(S): French, Sidney J.; Kahlenberg, Louis  
 SOURCE: Transactions of the American Electrochemical Society (1928), 54, 163-99  
 CODEN: TAEASD; ISSN: 0096-4786  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 509 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Oxidations, especially those in the vapor phase, are effected by use of a catalyst containing a multicomponent zeolite formed by the reaction of at least one soluble silicate, at least one metallate and at least one metal salt, the basic radical of which enters the non-exchangeable nucleus of the zeolite. The catalytic element may be contained in or combined with the zeolite or may be contained in a diluent with which the zeolite may be mixed. The silicate component consists of an alkali metal silicate which may contain alkali salts of acids of the elements, B, P, S, N, Sn, Te, As, or Sb. The metallate component consists of alkali metal compds. of the elements Al, Cr, Zn, V, Be, Sn, Pd, Os, Pt, Ti, Zr, Pb, W, B, Mo, U, Ta, Cu, Ni, Fe, Co, Ag, Cd, Mn, Bi, Th, or Ce. The metal may be present in complex ions formed with NH3, HCN, HCNS, oxalic, formic, tartaric or citric acids, glycerol or sugars. The metal salt component consists of a soluble salt of Cu, Ag, Au, Be, Zn, Cd, Al, rare earths, Ti, Zr, Sn, Pb, Th, Cr, U, V, Mn, Fe, Ni, or Co. The alkali metal in the zeolite may be replaced by base exchange by the cations, NH4, Cu, Ag, Au, Be, Mg, Ca, Zn, Sr, Cd, Ba, At, Ti, Tl, Zr, Sn, Th, V, Cr, U, Mn, Fe, Co, Ni, Pd, or Pt, either simple or complex ions. The zeolites may be treated to form salt-like compds. by treatment with acids or salts of acids of V, W, U, Cr, Mo, Mn, Se, Te, As, P, S, Cl, Br, F, N, or B, or with polyacids or peracids or their salts, or with compds. containing complex anions such as ferro-, ferri-, sulfo-, or metal-CN, NH3 complexes, etc. The catalysts are suitable for use in the oxidation of C6H6, toluene, phenol, naphthalene, anthracene, fluorene, eugenol, isocugenol, MeOH, or EtOH, etc., to produce their desired oxidation products or for selective oxidations in purification treatments. Cf. C. A. 23, 1135.

ACCESSION NUMBER: 1929:18546 CAPLUS  
 DOCUMENT NUMBER: 23:18546  
 ORIGINAL REFERENCE NO.: 23:2185h-1,2186a-c  
 TITLE: Catalytic oxidation of organic compounds  
 INVENTOR(S): Jaeger, A. O.  
 PATENT ASSIGNEE(S): Selden Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 296071		19270826	GB	

L38 ANSWER 508 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Catalysts for SO3 production comprise multi-component zeolites formed by the interaction of one or more silicates, one or more metallates and one or more metal salts, the basic radicals of which enter the non-exchangeable part of the zeolite. Catalytically active elements or radicals are combined in or used with the zeolite. The silicate component may be an alkali metal silicate or a silicate soluble in alkali and may be partly replaced by alkaline salts of acids of the elements S, N, Sn, As or Sb. The metallate component may be a soluble alkali metal compound of Al, Cr, Zn, V, Be, Sn, Pd, Pt, Ti, Pb, W, B, Mo, U, Ta, Cu, Ni, Fe, Co, Ag, Cd, Mn, Zr, Th or Ce, or a complex compound of these metals formed with NH3, HCN, sulfoxonic acid, oxalic acid, formic acid, tartaric acid, citric acid, glycerol or sugars. The metal salt may be a water-soluble salt of the elements Cu, Ag, Au, Be, Zn, Cd, Al, rare earths, Ti, Zr, Sn, Pb, Th, Cr, U, V, Mn, Fe, Ni and Co. Alkali metal cations in the zeolite may be replaced by the cations NH4, Cu, Ag, Au, Be, Mg, Ca, Zn, Sn, Th, V, Cr, Sr, Cd, Ba, Al, Ti, U, Mn, Fe, Co, Pd, Ni, Pt or complex ions containing them. Numerous details and modifications of the products are described. Cf. C. A. 23, 1221.

ACCESSION NUMBER: 1929:19098 CAPLUS  
 DOCUMENT NUMBER: 23:19098  
 ORIGINAL REFERENCE NO.: 23:2254a-d  
 TITLE: Sulfur trioxide  
 INVENTOR(S): Jaeger, A. O.  
 PATENT ASSIGNEE(S): Selden Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 296048		19270824	GB	

L38 ANSWER 510 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB A mixture of approx. equal parts of CO and H with a trace of O, when passed at a space velocity of from 1500 to 2000 over a Ni-Pd catalyst supported on Al or pumice stone, produced 1-3% of C2H4 at temps. in the neighborhood of 100°; the catalyst lost 0.5 of its efficiency in 30 hrs. Other catalysts in order of decreasing activity were Ni-Cu-Pd, Fe-Ni-Pd, Ni-Pt, Cu-Co-Fe, Cu-Pd, Cu-Co-Ni, C-Pd, Ni-Cu, Cu-Co. While saturated hydrocarbons were not specially sought, Ni and Ni-Pd catalysts yielded from 20-5% CH4 at temps. in the neighborhood of 250°. The catalysts showed little decrease in activity after several days' use.

ACCESSION NUMBER: 1927:11916 CAPLUS  
 DOCUMENT NUMBER: 21:11916  
 ORIGINAL REFERENCE NO.: 21:1444c-d  
 TITLE: Catalytic preparation of unsaturated hydrocarbons from carbon monoxide and hydrogen  
 AUTHOR(S): Hooves, C. R.; Dorcas, M. J.; Langley, W. D.; Mickelson, H. G.  
 SOURCE: Journal of the American Chemical Society (1927), 49, 796-805  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable



L38 ANSWER 511 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB The decolorization of crystal violet by H2O2 in the presence of metallic salts was studied. The oxidation occurs in 2 phases: the catalytic activation of the H2O2 and the oxidation of the crystal violet by the activated H2O2. The most active **catalysts** are Fe, Co, Ni, Pd, and Pt ions. Less active are the ions of Cs, Rb, K, Na, Li, Cu, Ag, and Au in descending order. The Mg and Mn ions are very feebly active. Ca, Sr, Ba, Zn, Cd, Hg, Al, Sn, Pb, Bi, Th, and U ions are entirely inactive. With the exception of the feebly active Mn and Mg, the active ions all belong in groups I and VIII of the periodic table. These ions are characterized by interatomic instability. The oxidation of crystal violet is augmented by the presence of an excess of OH ions. Increasing concns. of buffer salts decrease the speed of the reaction. The effect of irradiation was now tried on various combinations of the components of this 3-phase system. Irradiation of the complete 3-phase system, or of the combination dye plus metallic salt, leads to an enormous increase in the speed of oxidation of crystal violet. Irradiation of the catalyzer gave a slight increase in the rate of reaction only in the case of the Fe, Pt, Cs, and Rb ions. Of these the Fe and Pt ions were influenced most. The irradiation changes the metallic ions so that they contain and apparently emit electrons; for a solution of FeCl3, when subjected to irradiation, becomes phosphorescent and emits  $\beta$ -rays in amts. sufficient to register on a photographic plate.

ACCESSION NUMBER: 1924:519 CAPLUS  
 DOCUMENT NUMBER: 18:519  
 ORIGINAL REFERENCE NO.: 18:88e-h  
 TITLE: The mechanism of the catalytic components involved in cell respiration and the influence of Rontgen rays upon these components. (The biological focus of attack of Rontgen rays)

AUTHOR(S): Ellinger, Philipp; Landsberger, Max  
 SOURCE: Klinische Wochenschrift (1923), 2, 966-9  
 CODEN: KIW0A2; ISSN: 0023-2173  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 513 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Irreversible hydrosols are converted into organosols in organic media not miscible with H2O, by producing in an aqueous solution of the hydrosol an amorphous precipitate of an organic compound which is soluble or finely dispersible in the organic medium, separating the intimate mixture of precipitate and colloid, driving off the H2O and dissolving the dried product in the organic medium; the initial hydrosol may be provided with a protecting colloid. The production of the amorphous precipitate may be effected by mixing the hydrosol with a solution of the amorphous organic compound in question in an organic solvent, or by mixing the hydrosol with an aqueous solution of an organic compound and adding acids, bases, or salts, which will yield the required amorphous precipitate. For the first of these two methods, solns. of waxes, colophonic acids, fats, alcs. of high b. p., etc., in alc. or acetone are suitable. In the second method, there may be employed aqueous solns. of salts of aromatic hydroxyl compds., fatty acids, halo fatty acids, hydroxy fatty acids, colophonic acids, oxidized train-oil acids, or sulfonic acids of high mol. weight, which are dissolved in the hydrosol and precipitated by addition of mineral acids or alkaline-earth or heavy-metal salts, e. g., Cu, Cr, Na, Fe, Al salts; alkali naphthenates are particularly suitable. The process can be applied to the production of organosols of elements such as C, S, Se, Te, Hg, Ag, Bi, W, Os, Ni, Pd, inorganic compds. such as Al2O3, ZnO, TiO2, SnO2, SiO2, HgO, Hg2Cl2, NiO, As2S3, BaSO4, talc, PbCrO4, or other pigments, or organic compds. such as Ca(OCO)2, Cu2Fe(CN)6, AgCN or AgSCN; it is not, however, applied to reversible organic colloids, such as gelatin, albumin, carbohydrates, or dyestuffs. Examples are given of the production of organosols of Ag in vaseline, and PbCrO4 in oil. The colloidal solns. of S, Se, Te, Ag, Hg, Bi, Os, Hg2Cl2, HgO, etc. in fats, oils, waxes, paraffin, vaseline, lanoline, etc., may be used for pharmaceutical purposes; the colloidal solns. of metals such as Ni, Pt, or Pd, or oxides such as NiO may be used as **catalysts** in hydrogenating fats; the colloidal solns. of graphite, talc, etc., in lubricating oils or fats can be employed as lubricants; the colloidal solns. of PbCrO4 and other mineral pigments in linseed oil, varnish, etc., may be used as oil colors.

ACCESSION NUMBER: 1916:17192 CAPLUS  
 DOCUMENT NUMBER: 10:17192  
 ORIGINAL REFERENCE NO.: 10:3144b-g  
 TITLE: Colloidal elements and compounds  
 INVENTOR(S): Karpus, H.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1508641		19150611	GB	

L38 ANSWER 512 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB "The activity of **catalysts** employed in the hydrogenation of gaseous or liquid organic compds. is connected with the colloidal state to the extent that it is largely dependent upon the surface at which the interaction takes place. although **catalysts** which are definitely colloidal sols are actually less energetic in their action than various other types. The most efficient agents are those possessing a capillary or fibrous structure exposing a maximum surface per unit mass; sometimes the metal itself may be obtained in this form (e. g., spongy Pt or Pt black) but more frequently it is found necessary to deposit the **catalyst** in the form of a precipitate of one of its compds. upon an inert material (a "catalyst support") of a permanently porous structure such as pumice, certain forms of charcoal, asbestos, diatomaceous earth, or similar substances." Apart from sp. chemical changes, the accessibility of the **catalyst** surface to H and the organic compound is the chief general factor in hydrogenation reactions. These are (in increasing order of difficulty): saturation of ethylenic and acetylenic linkages; reduction of oxides of N to NH3; reduction of CO and CO2 to CH4; reduction of aldehydes and ketones to corresponding alcs. or hydrocarbons; 3reduction of nitro compds., amides, nitriles and oximes to amino compds.; hydrogenation of the benzenoid nucleus; hydrogenation of heterocyclic (N) nucleus. This report excludes synthesis of NH3, being limited to organic compds. The **catalysts** are considered under the following groups: Colloidal sols (Pd and Pt); nonsupported finely divided metals (Pd, Pt, Ni, Cu); supported finely divided metals (Pd, Ni). Then follow discussions of catalytic dehydrogenation, essential conditions of the catalytic surface (extent, protective action of supports, **catalyst** poisons and stimulants); the mechanism of hydrogenation (phys. theories, intermediate chemical compds., e. g., metal hydrides, oxyhydrides, "nickel sub-oxide," unstable metallo-organic compds. associated with metal-H complex). An extensive bibliography is appended.

ACCESSION NUMBER: 1923:5060 CAPLUS  
 DOCUMENT NUMBER: 17:5060  
 ORIGINAL REFERENCE NO.: 17:916h-1,917a-c  
 TITLE: Colloids in catalytic hydrogenation  
 AUTHOR(S): Armstrong, E. F.; Hilditch, T. P.  
 SOURCE: Brit. Assoc. Advancement Sci.; 4th Rept. (1922) 327-46  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

L38 ANSWER 514 OF 514 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB Hydrogenating liquid unsaturated fats and oils and mfg. a mixed **catalyst**, in one operation, by adding the following mixts. to the oil, etc., and treating the whole at a suitable temperature with H. The mixts. to be added to the oil, etc., are: the oxides, hydroxides, or carbonates of 2 or more of the metals, Ni, Co, or Cu; or 1 or more of these oxides, hydroxides, and carbonates and finely divided Pd, Pt, or Ag, or Ag2O. These mixts. may be employed when produced on the surface of porous carriers. By the use of these mixts., the reduction of the compds. referred to is effected at comparatively low temps. In examples, hydrogenation is effected by the addition of a mixture of Ni and Cu oxides obtained by heating the carbonates precipitated together; a mixture of Ni and Cu hydroxides; a mixture of Ni and Cu carbonates precipitated together. Ni hydroxide mixed with Pd; Ni hydroxide mixed with Ag2O; a mixture of Ni and Cu oxides obtained by impregnating asbestos with a solution of the mixed nitrates, drying and heating. Pressure may be used to hasten the process.

ACCESSION NUMBER: 1914:26750 CAPLUS  
 DOCUMENT NUMBER: 8:26750  
 ORIGINAL REFERENCE NO.: 8:3869b-d  
 TITLE: Hydrogenating liquid unsaturated fats and oils and mfg. a mixed **catalyst**.

INVENTOR(S): Dewar, J.; Liebmann, A.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1312982		19130604	GB	

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